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ABSTRACT

Participants in this survey were 33 countries from various continents, all members of the United Nations Educational Scientific and Cultural Organization. In the document, education wastage in the elementary school is divided into 3 main components: (1) nonattendance, (2) repetition of grade, and (3) withdrawal from the school cycle. Year-grade and cohort data are compared and discussed for each country involved in the study. The enrollment and loss percentages are graphically identified. The document also includes discussions of financial costs, causes for wastage, and means of combatting wastage. It is concluded that (1) a number of curricular studies are required in order to reassess the type of education given at the primary stage and (2) that a main cause for wastage is thought to be inappropriate standards of education. [Not available in hard copy due to marginal legibility of original document.] (EL)

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UNITED NATIONS EDUCATIONAL,
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TECHNICAL SEMINAR ON EDUCATIONAL WASTAGE AND SCHOOL DROP-OUTS
(Bangkok, 5 - 12 September 1966)

A SURVEY OF WASTAGE PROBLEMS IN ELEMENTARY EDUCATION

by

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June, 1966

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THE UNESCO STUDY ON WASTAGE

Introduction

The aim of this report is to survey some of the problems in the field of wastage in elementary education. It is divided into several aspects. The first part deals with definitions of wastage, measures of wastage data, the limitations of existing material and estimates of the cost of wastage. This section also reviews and discusses the type of data required for the adequate analysis of wastage problems and methods of data collection. A second section deals with the break-down of overall data into its component parts and examines wastage in terms of its possible causes. Finally a model is suggested for collection of wastage data from different countries, ways of estimating the effects of different measures, and means of investigating the causes of wastage.

Definition of Wastage

Educational wastage can be divided into several elements. Firstly there is non-attendance and although this is not discussed in detail in the present report it is relevant in so far as it may be associated with other aspects of wastage at the elementary school level. Essentially this report deals with two components of the wastage problem.

1. Repetition (Sometimes referred to as retardation, stagnation or failure). Repetition refers to the fact that some children do not progressively climb through the school, rising a grade each year. (See Progress of the Non Self Governing Territories, 1961). The extent to which children remain in one particular grade for a period in excess of a year is referred to as repetition. The term 'repetition' is preferred to 'retardation' since, as pointed out in the Special Study on Educational Conditions in Non Self Governing Territories, (1956) the latter has alternative meanings.

2. Withdrawal from the school cycle. This refers to children who leave school at an intermediate point (non-terminal grade) in their career. It is also referred to as "drop-out", and desertion.

It should be noted that both aspects of wastage may occur in the same person, and although an individual may drop-out at one point in his school career he may return at a later stage to continue with his education and may re-enter at the same grade (i.e. repetition), or may be promoted to a higher grade. The meaning of the term is confused by the fact that some reports use the term 'wastage' to mean drop-out.

Measures of Wastage

It is difficult to obtain accurate data on wastage and very few direct assessment figures are available. Most of the measures are indirect. There are a number of limitations to such material and these are discussed below.

1. Year-grade data. The education departments of most countries make year-per-grade data available. This indicates the number of enrolments per grade for a given year. When this data is plotted in histogram form it generally gives rise, at least in countries where there is not automatic promotion, to a pyramid structure which shows a large number of pupils in the first grade and fewer in the second grade. The number of pupils decreases in succeeding grades until there is a very small number of pupils in the top grade. An example is given in Figure 1. It has been suggested by some authorities (see Progress of the Non Self Governing Territories, 1961) that the differences between one grade and the previous grade, or a particular grade and the first grade, represent measures of wastage. However, such estimates must be regarded as extremely inaccurate. The data do not allow for a comparison between the same individuals at different stages in their career, but do allow a comparison of different individuals at different stages in their careers. In other words the data are cross-sectional rather than longitudinal. Cross-sectional data do not take into account changes in the school curriculum, nor increase in sizes of classes which may, for example, result from a government's action to increase primary education or make education compulsory. Since policy changes in elementary education are generally designed to result in increased education it is natural that this increase should first occur in the youngest age groups, and/or the lowest grades. It follows therefore that a change in policy implemented, say three years ago, will have influenced the first three grades, but not the later grades. Thus, a discrepancy between one grade and another can be the result of a policy to educate more children rather than an estimate of wastage. The effect of such changes, particularly in under-developed countries where there is under-education rather than full education, is to exaggerate the extent of the wastage problem if this is based on grade data for a single year.

The magnitude of error caused by using year/grade data as an estimate of wastage compared with cohort data will depend on a number of factors. The error will be greatest when enrolment figures change considerably from year to year. That is, we may expect considerable

Figure 1

SWAZILAND

Histogram Showing Enrolment Figures for Primary Grades in 1965

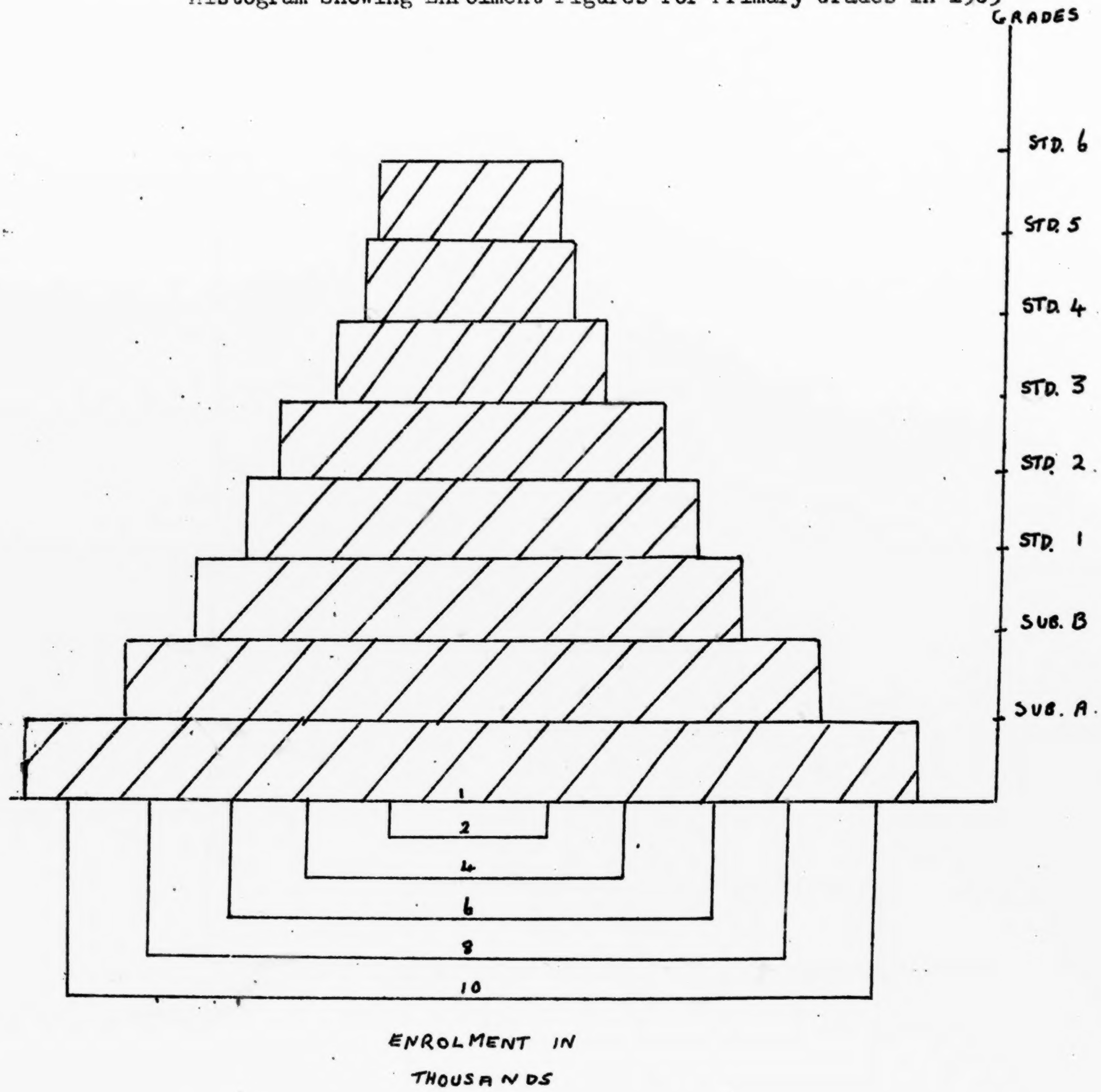
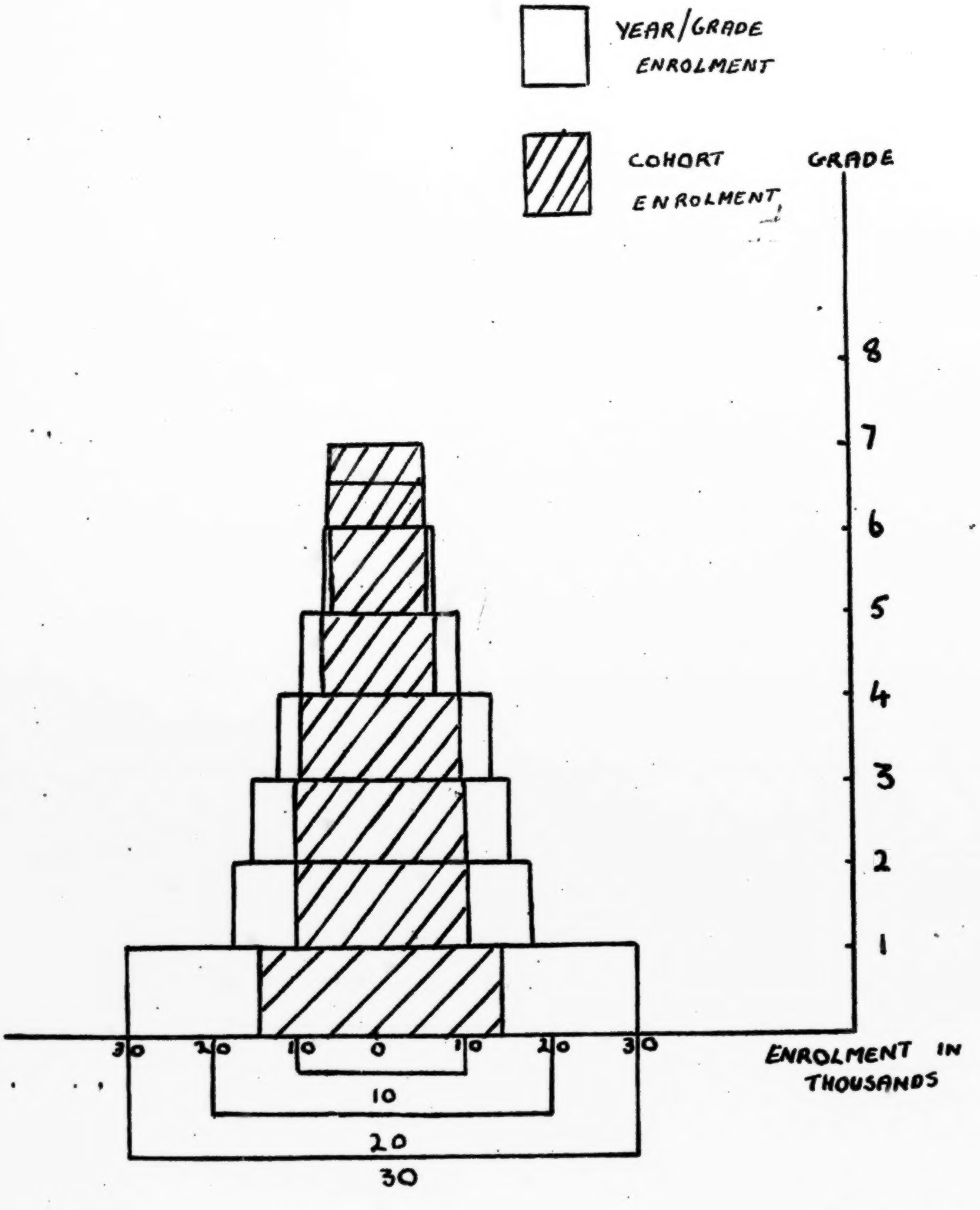


Figure 2

SIERRA LEONE
Comparison of Year Grade Data (1956) and Cohort Data.



degree of error in countries with a steeply rising birth rate who have compulsory education, or in countries which are gradually introducing compulsory education and thus bringing more and more children into the elementary school cycle each year. An example of this can be seen by examining the cohort and year/grade figures for Sierra Leone. If we look at Figure 2 we will see that the degree of loss using cohort data from 1956 to 1962 is in the order of 59%, that is, roughly 41 of the children according to the cohort statistics eventually make their way from grades 1 - 7. When we look at the year/grade data for 1962 we find that only 21% of the children are remaining in grade 7, compared with those in grade 1 (79% loss). The difference in numbers is about 16,000 which is outside all the possible ranges of acceptable error.

In addition to this type of error the data do not separate out those children who are transferred from one system to another, though the effect of this may be expected to balance out if a sufficiently large number of schools are included. The data also do not allow estimates of the difference between repetition and drop-out. Finally, there is no possibility of obtaining data on the extent to which repetition occurs for one, two, or more years in any one particular child. Although year/grade data are available for most countries we do not propose to reproduce it here as such limited data can only give rise to considerable error. Since there is no estimate of the extent of error an analysis would only be misleading.

2. Cohort data. Successive year/grade data give rise to cohort data. Since it is based on enrolment figures it is susceptible to the same type of errors as year/grade data. Cohort data are available for a number of countries and are sometimes included in the Mission Reports provided by Unesco. Cohort refers to data following the year by year progress of a group of children through their school cycle. For example, cohort data would indicate the children in grade 1 in 1950, grade 2 in 1951, grade 3 in 1952, and so on. A cohort represents the shortest period of time that a child can spend in school if he is to complete the cycle of elementary education, and is by definition the most desirable progress rate. Any departure from this will be reflected by the figures in terms of the difference between one year and the next. Thus, a decrease between the first grade and the second will represent (1) the number of children who have dropped-out, plus (2), the number of children who repeat the first grade, less (3), the number of children who repeat grade 2. Unfortunately cohort data do not tell us how many children have repeated the first grade, or any other grade. Transfer figures will also be hidden in this data, but if the material is randomly selected or represents material for the whole country, positive and negative transfer will presumably cancel each other out. However, this factor should be borne in mind when examinations are made of a

public school versus private school systems in any country, or when non-random selection of data takes place. For example, transfer from one system to another could, in extreme cases, be uni-directional. This may explain the increase in enrolment from one grade to the next which occasionally occurs. It seems possible that children may drop a grade when, for example, they are transferred. It is not possible to estimate the frequency of such events from the type of cohort data described above,

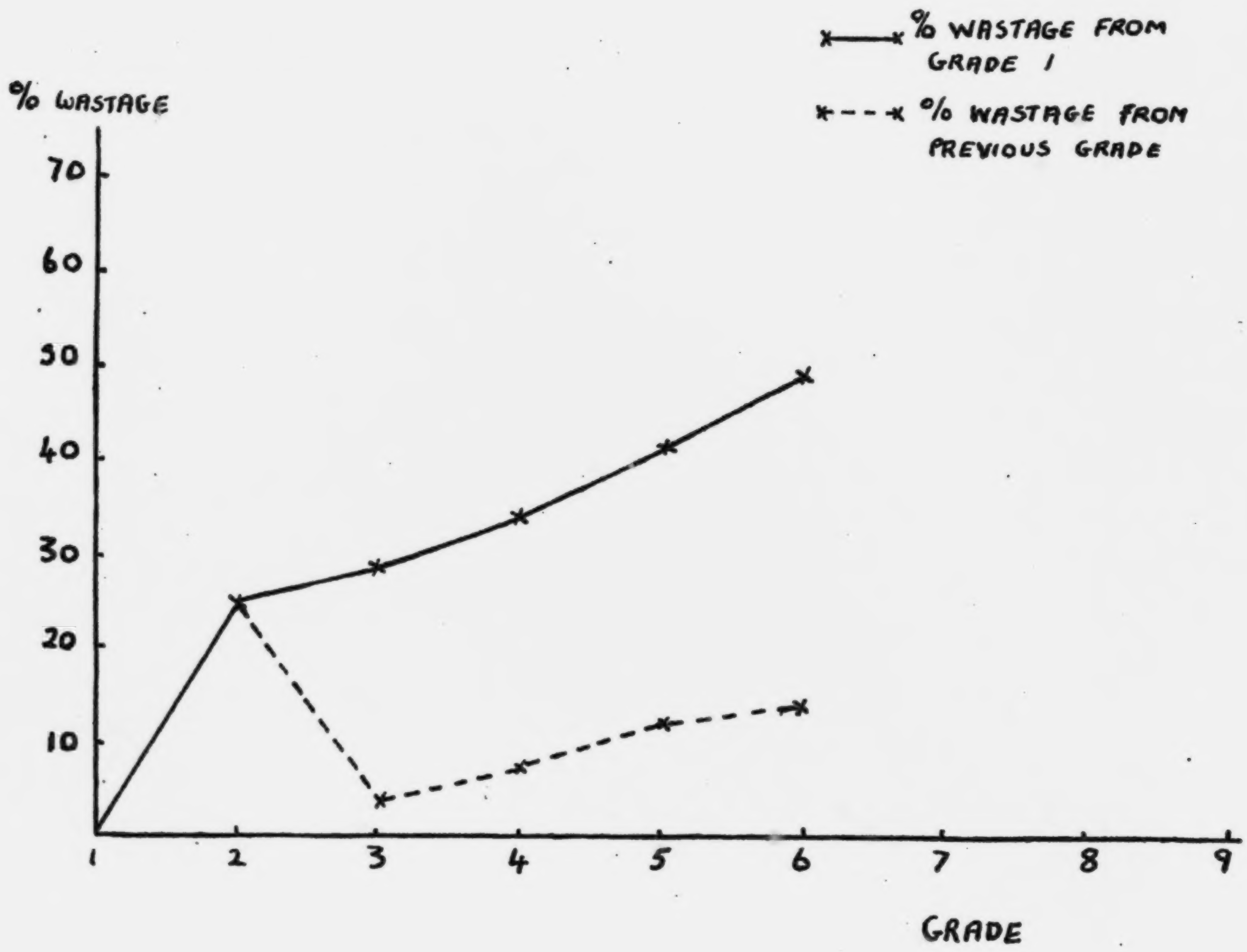
In the following pages cohort data are discussed for a number of countries and the enrolment figures for these countries are found in Appendix 1. These figures have been turned into percentages and are plotted in Figures 3 - 23. The percentages show the loss of education in terms of repetition and drop-out combined. Such graphs in reports very often show the number of people in succeeding grades. Since this report deals with wastage we are concerned with representing the percentage loss to education, and therefore the graphs represent the inverse of material presented in most Mission Report. It will be noted that two graph lines are presented in each figure: one represents the percentage loss in respect of the first grade, while the second graph line represents the percentage loss in relation to the preceding grade. Both these graphs are necessary if a representative picture of wastage is to be given. Both graphs show a large percentage loss between grade 1 and 2, and a smaller degree of loss in later grades. It should be noted that although the accumulated wastage at, say grade 6, may be only slightly greater than the accumulated wastage at grade 5, the change in percentage between grade 5 and 6 may nevertheless be extremely large. For example, let us suppose that there are 10,000 pupils in grade 1 and this reduces to 200 in grade 5. The percentage loss in relation to grade 1 (98%) is very high, and by grade 6 we will suppose that the wastage is such that only 100 pupils are left (99% wastage). This represents a small percentage increase in wastage in relation to registration in grade 1, though the percentage loss from grade 5 to 6 is 50%. In other words by only comparing each grade wastage with initial grade nodal points of wastage occurring at later stages can be overlooked. This point seems to have been ignored in the examination of previous data.

Cohort data are sometimes divided into male and female registration and, in a few cases, public and private registrations are recorded. Some examples of this data are presented in Figure 25 onwards.

It should be remembered that cohort data do not enable us to separate repetition from drop-out, nor do they allow us to comment on the amount of repetition in any group of children. Furthermore, they do not permit us to say how many children who initially drop-out return

Figure 3

CAMBODIA
1954 Cohort



Grade 1 enrolment - 77,900

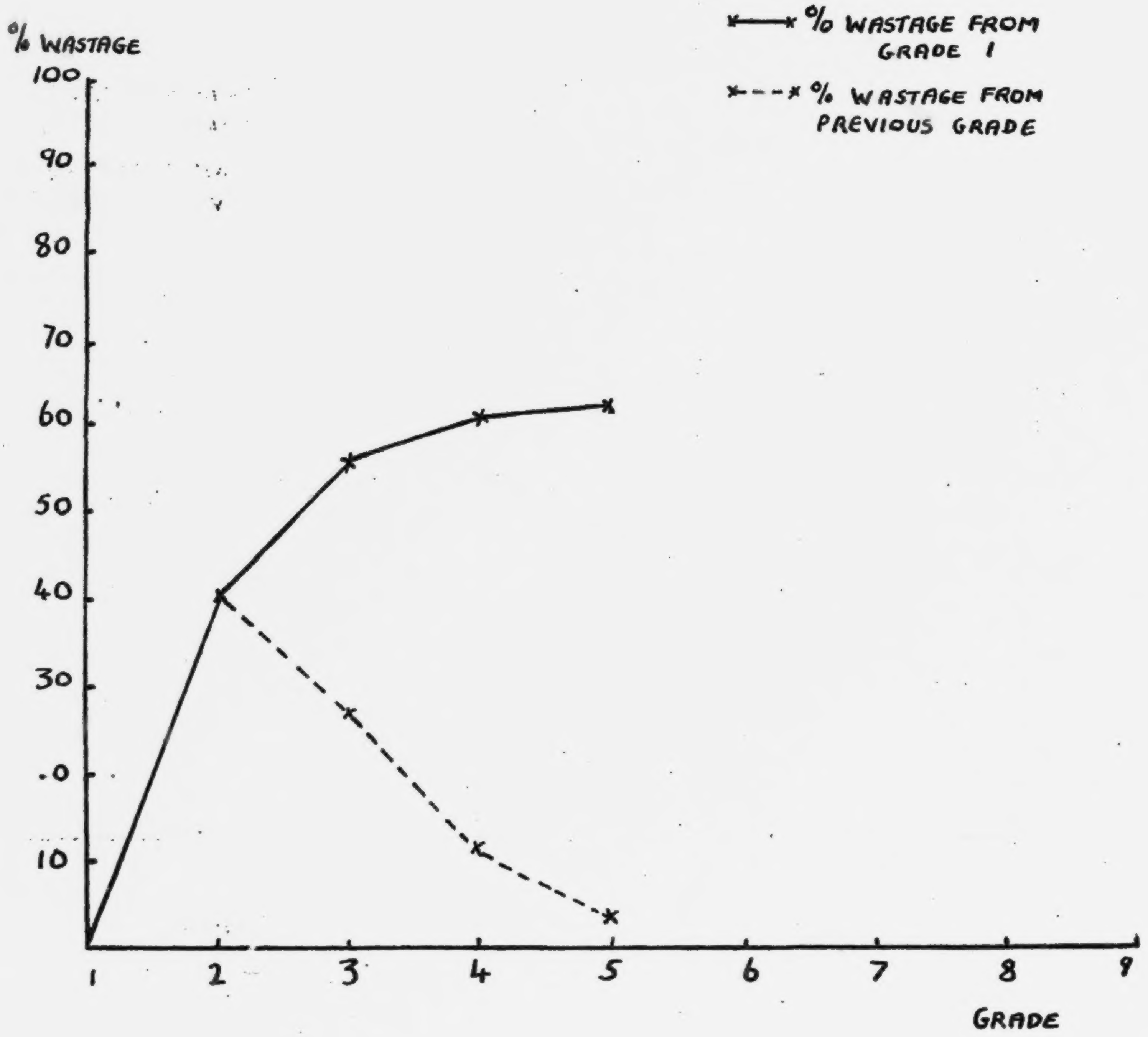
PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)

Figure 4

CAMEROON (East)

1957 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



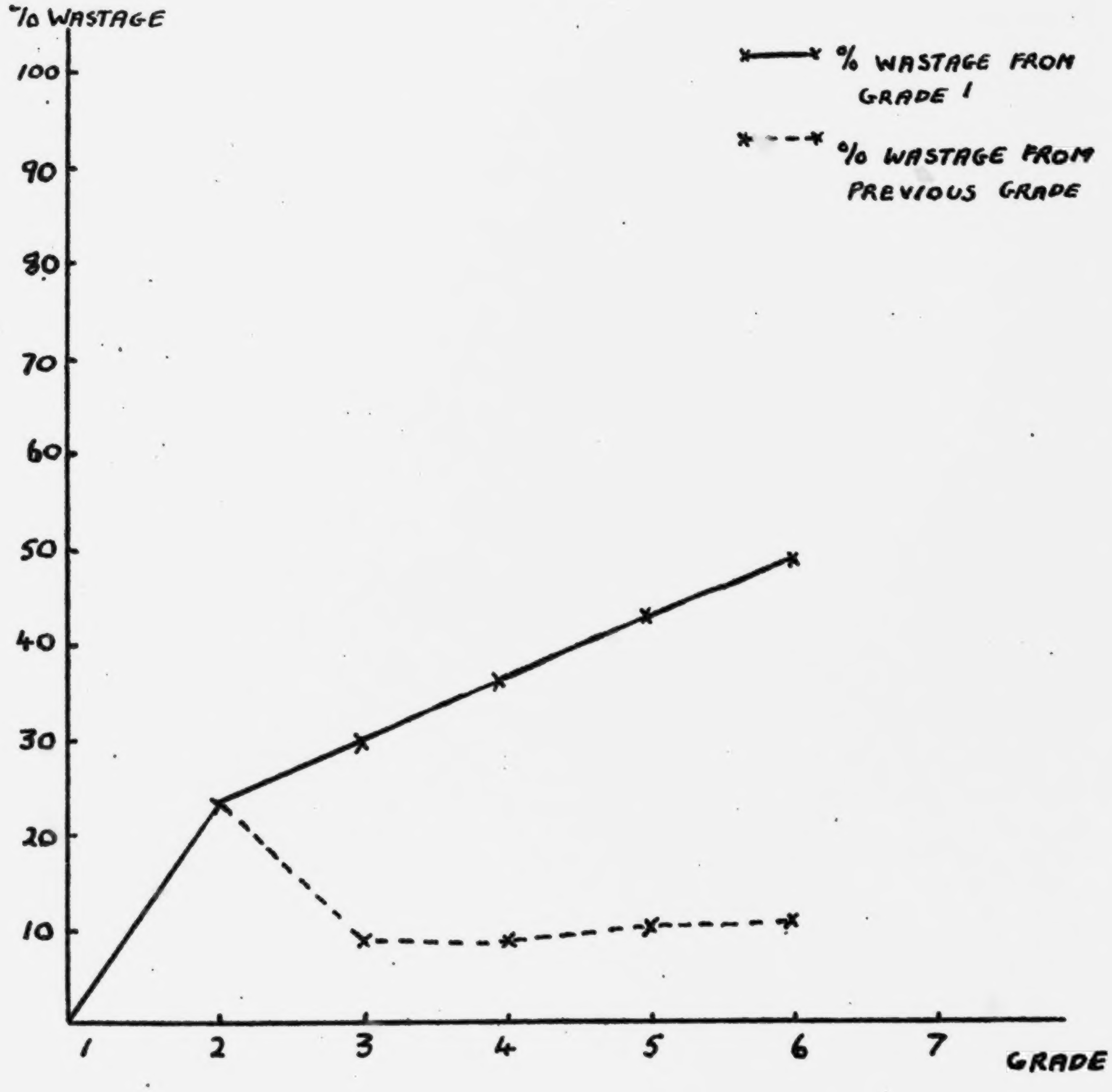
Grade 1 enrolment - 117,198

Figure 5

CEYLON

1957 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



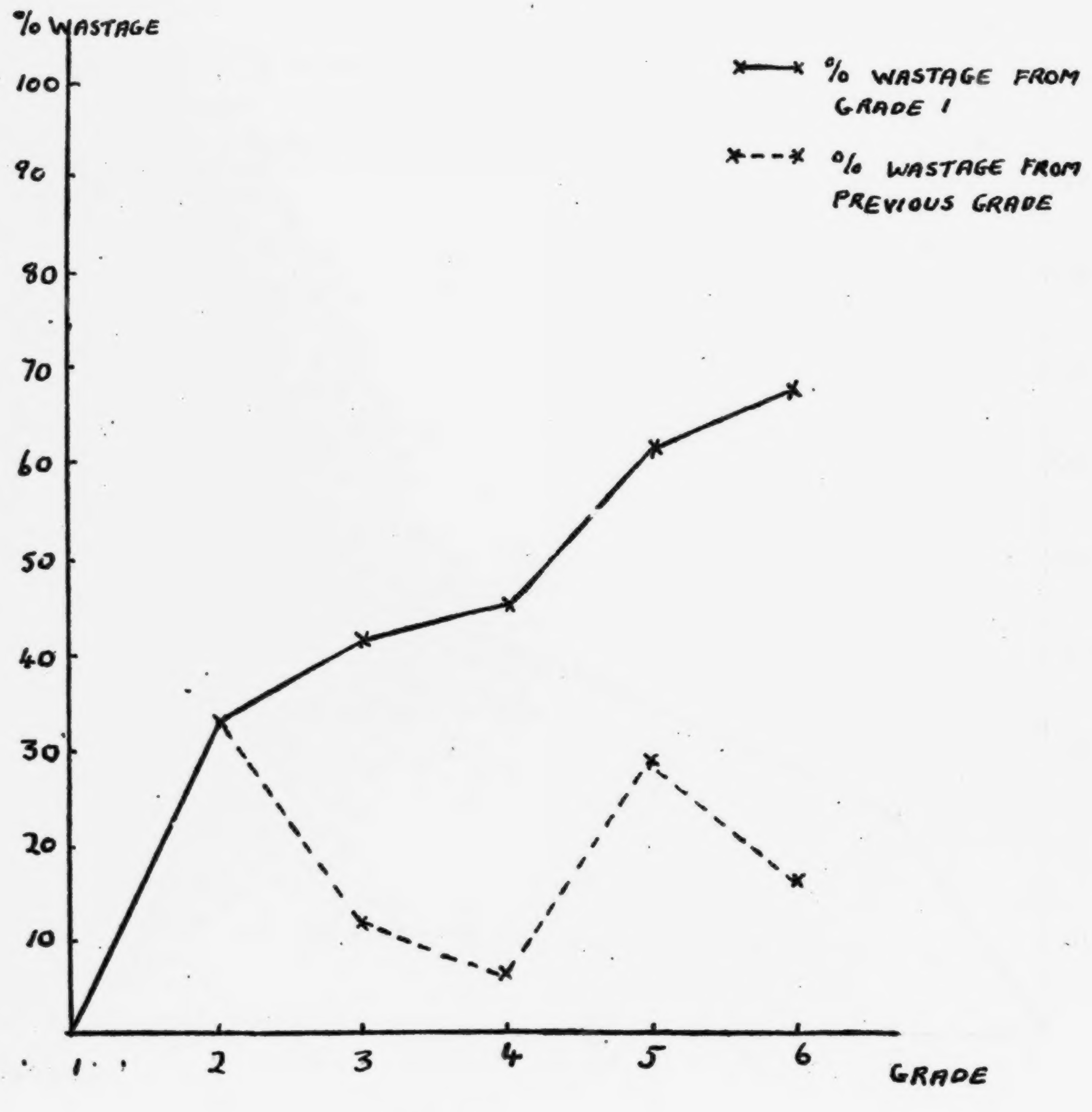
Grade 1 enrolment - 389.985

Figure 6

CHILE

1957 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



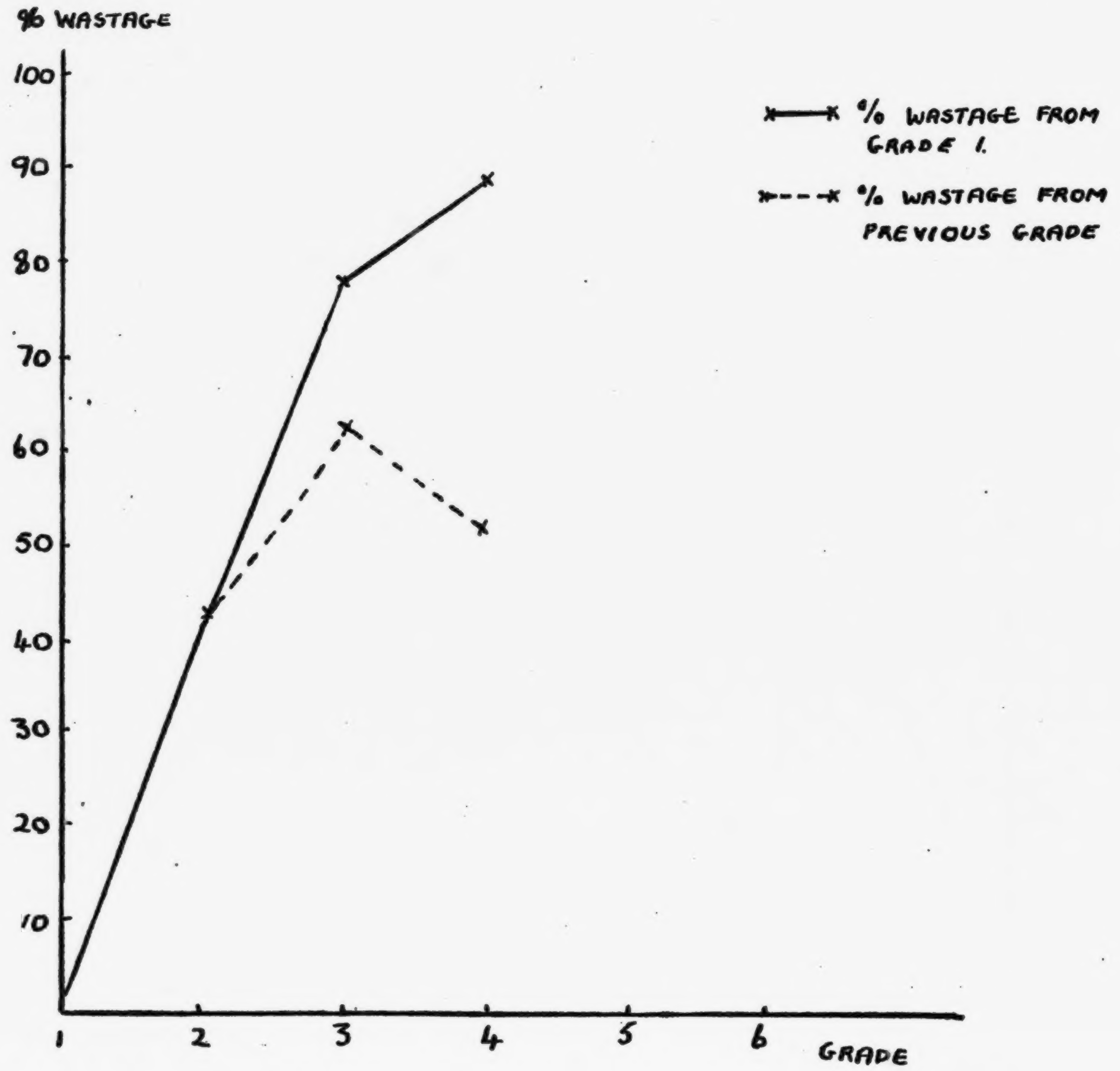
Grade 1 enrolment - 340,830

Figure 7

COLOMBIA

1946 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



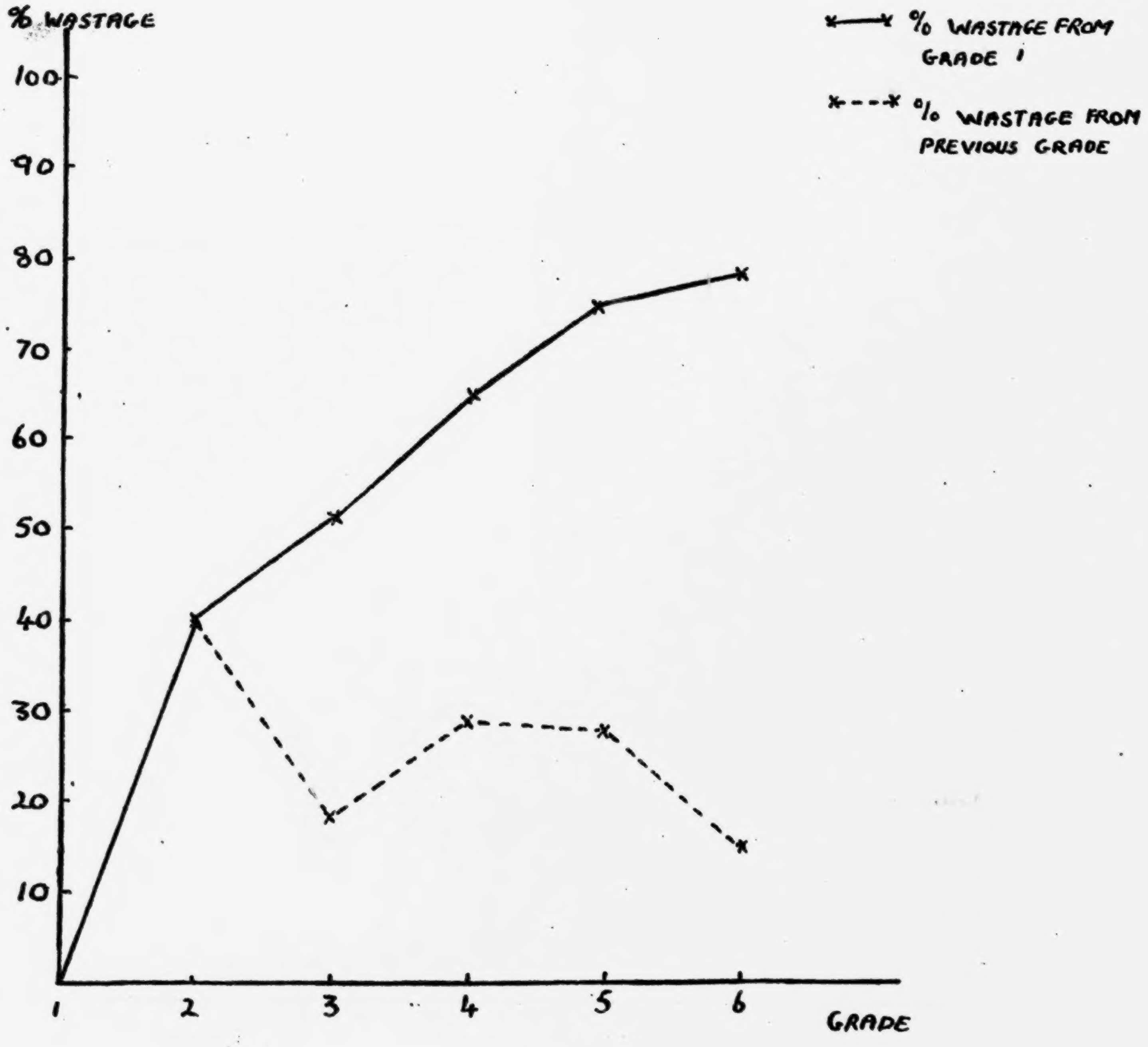
Grade 1 enrolment - 381,848

Figure 8

ECUADOR

1954 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



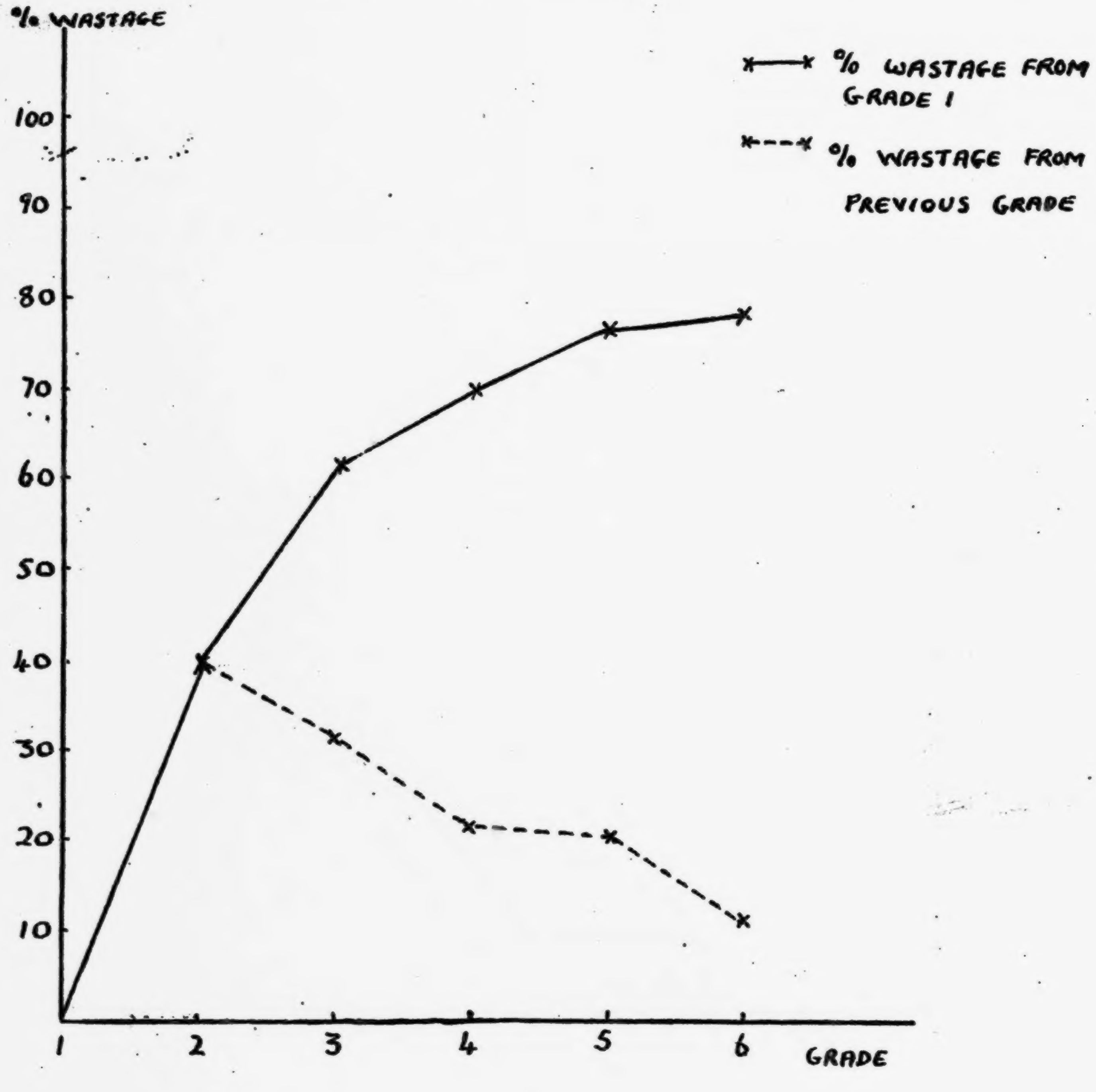
Grade 1 enrolment - 163,500

Figure 9

EL SALVADOR

1959 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



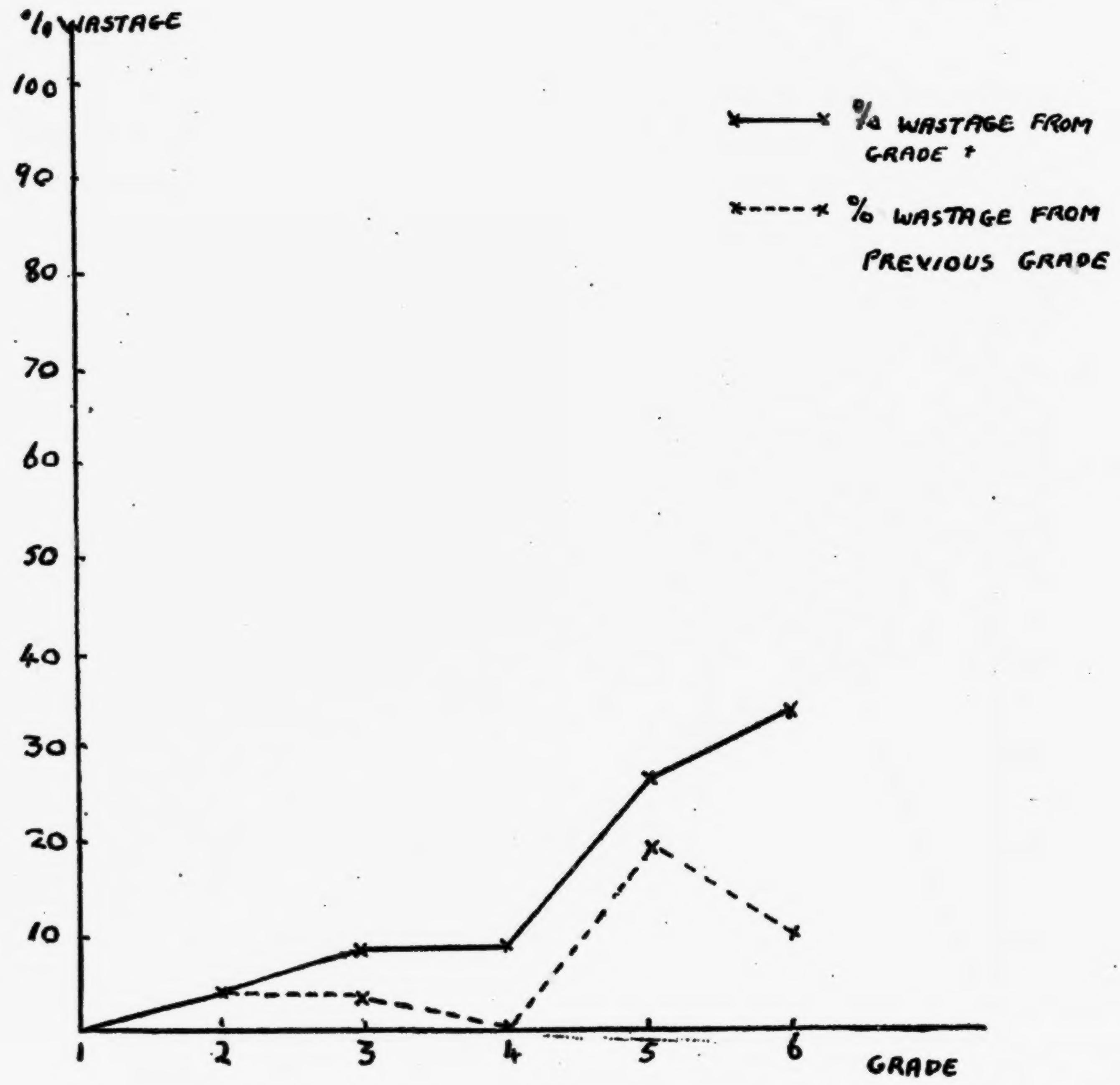
Grade 1 enrolment - 119.574

Figure 10

IRAN

1956 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)

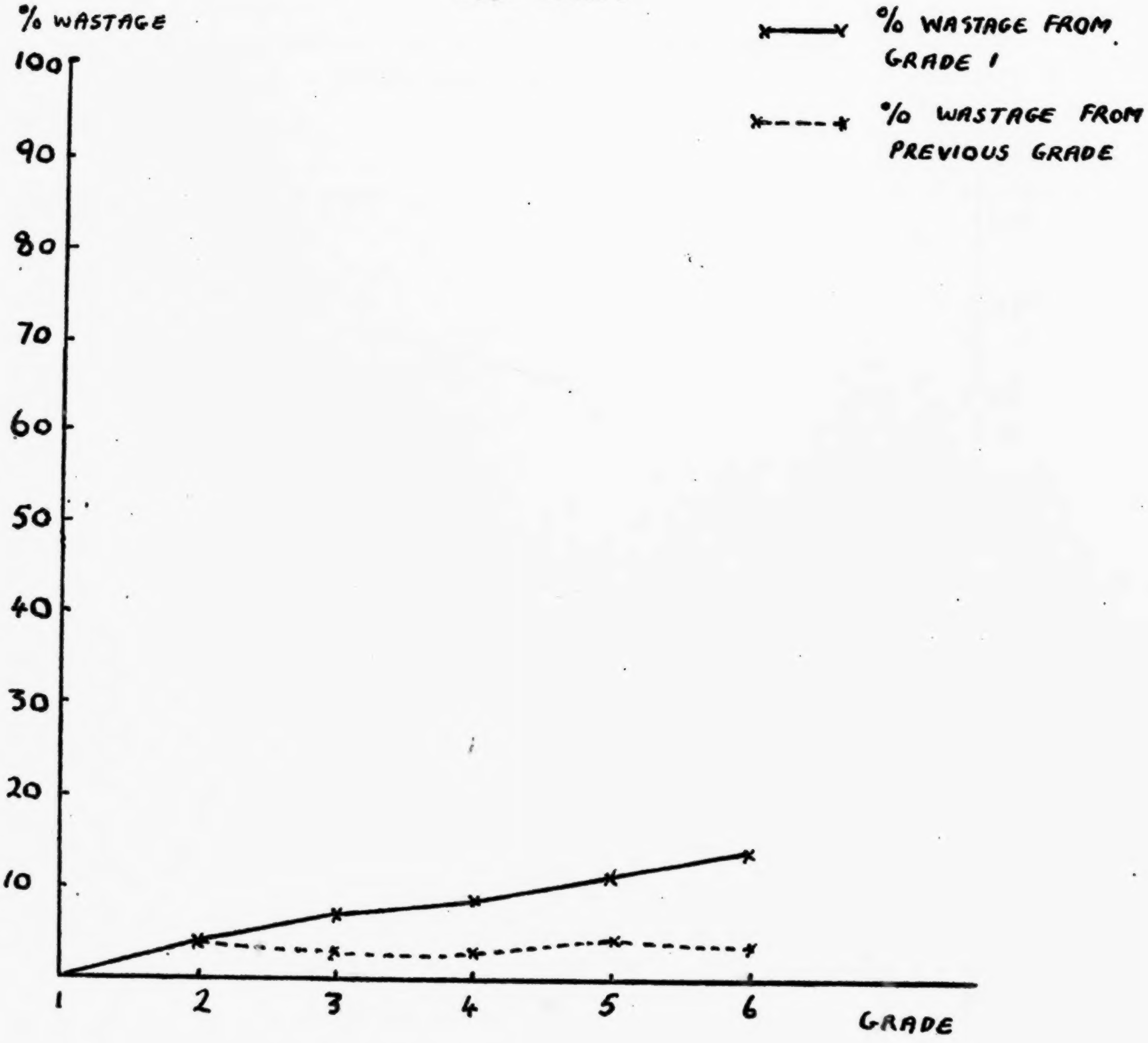


Grade 1 enrolment - (query)

Figure 11

KOREA

1956 Cohort



Grade 1 enrolment - 551,076

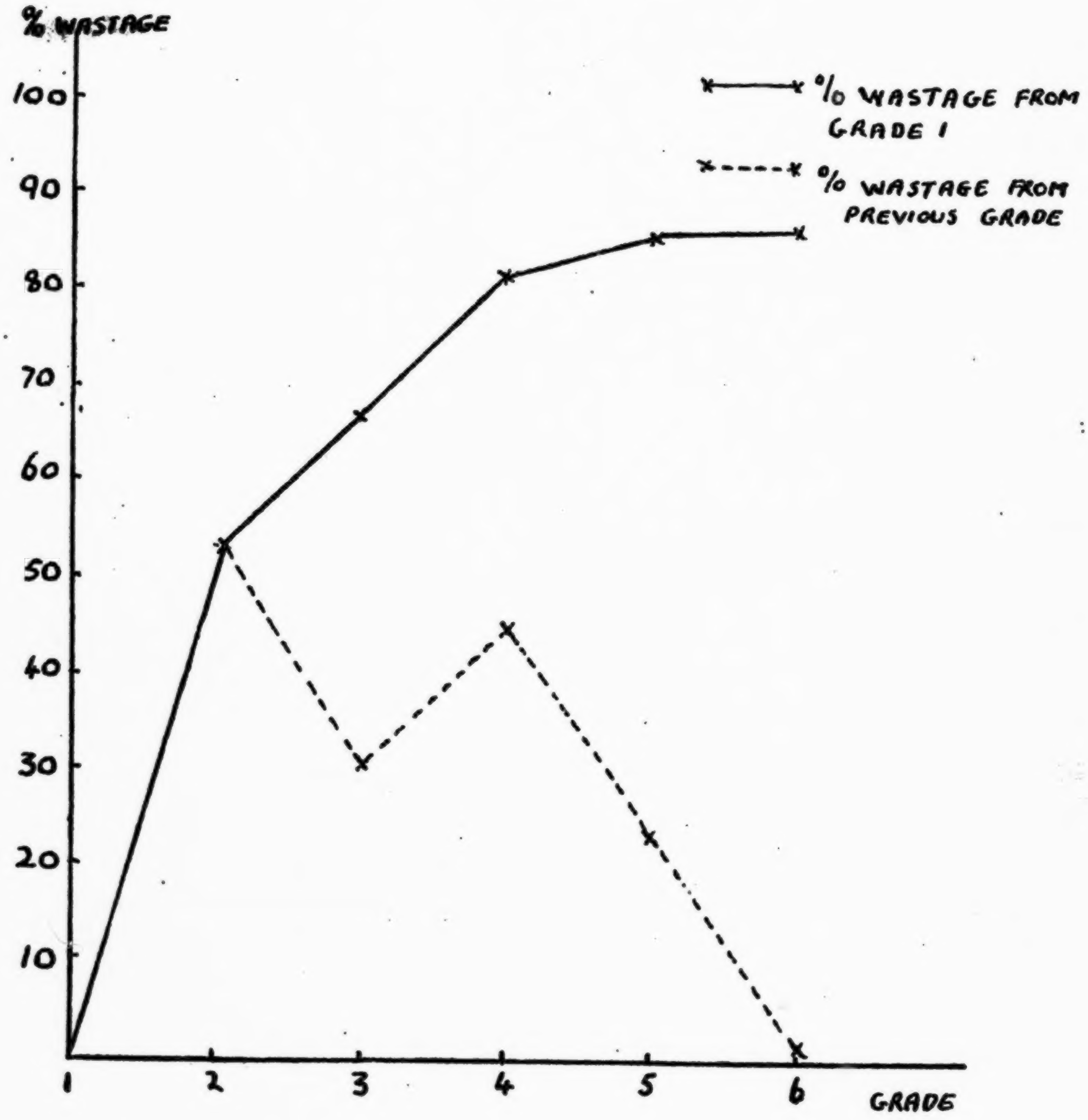
PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)

Figure 12

LAOS

1958 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)

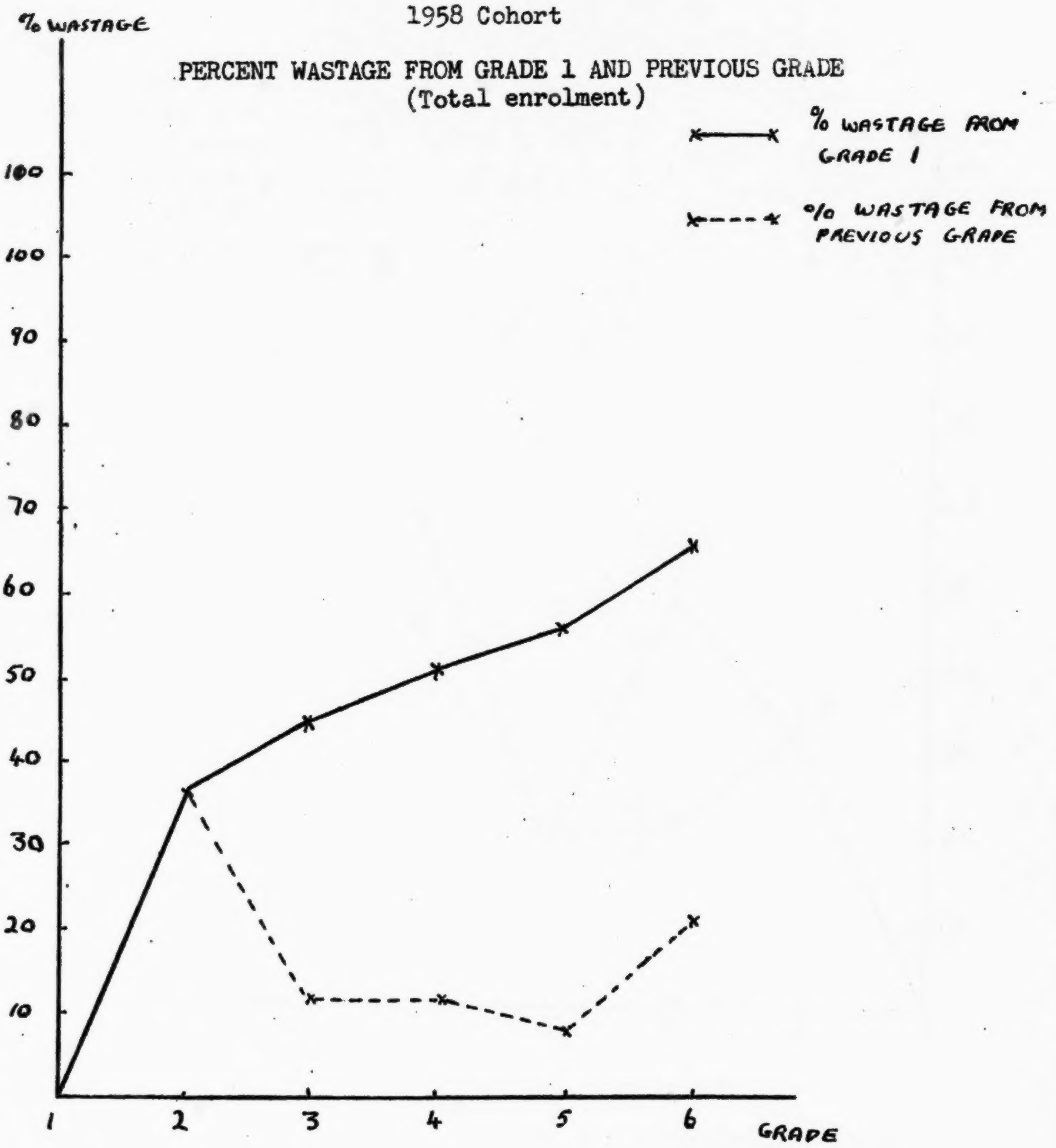


Grade 1 enrolment - 43,447

Figure 13

LIBYA

1958 Cohort



PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)

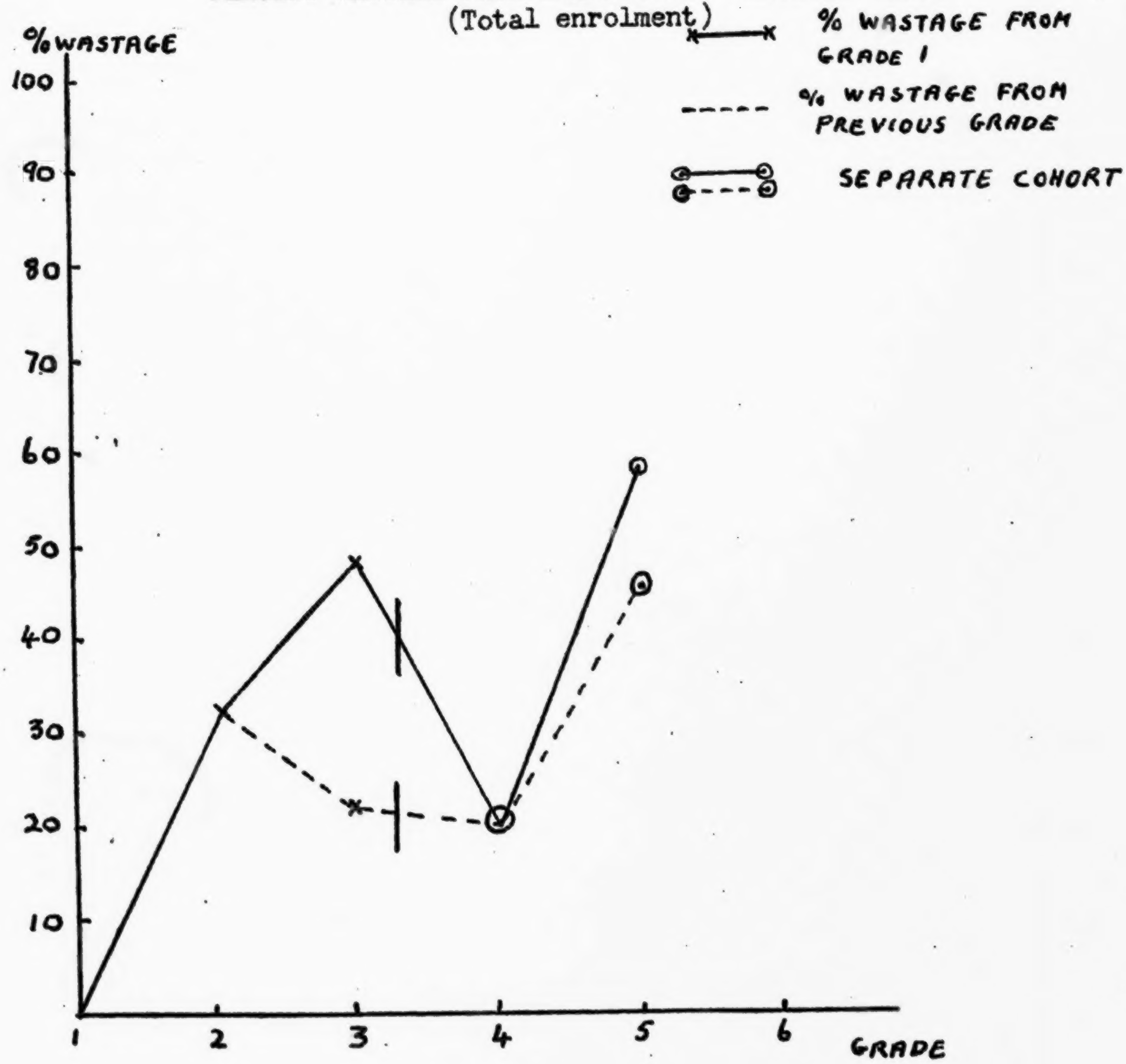
Grade 1 enrolment - 33 546

Figure 14

MADAGASCAR

1959 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



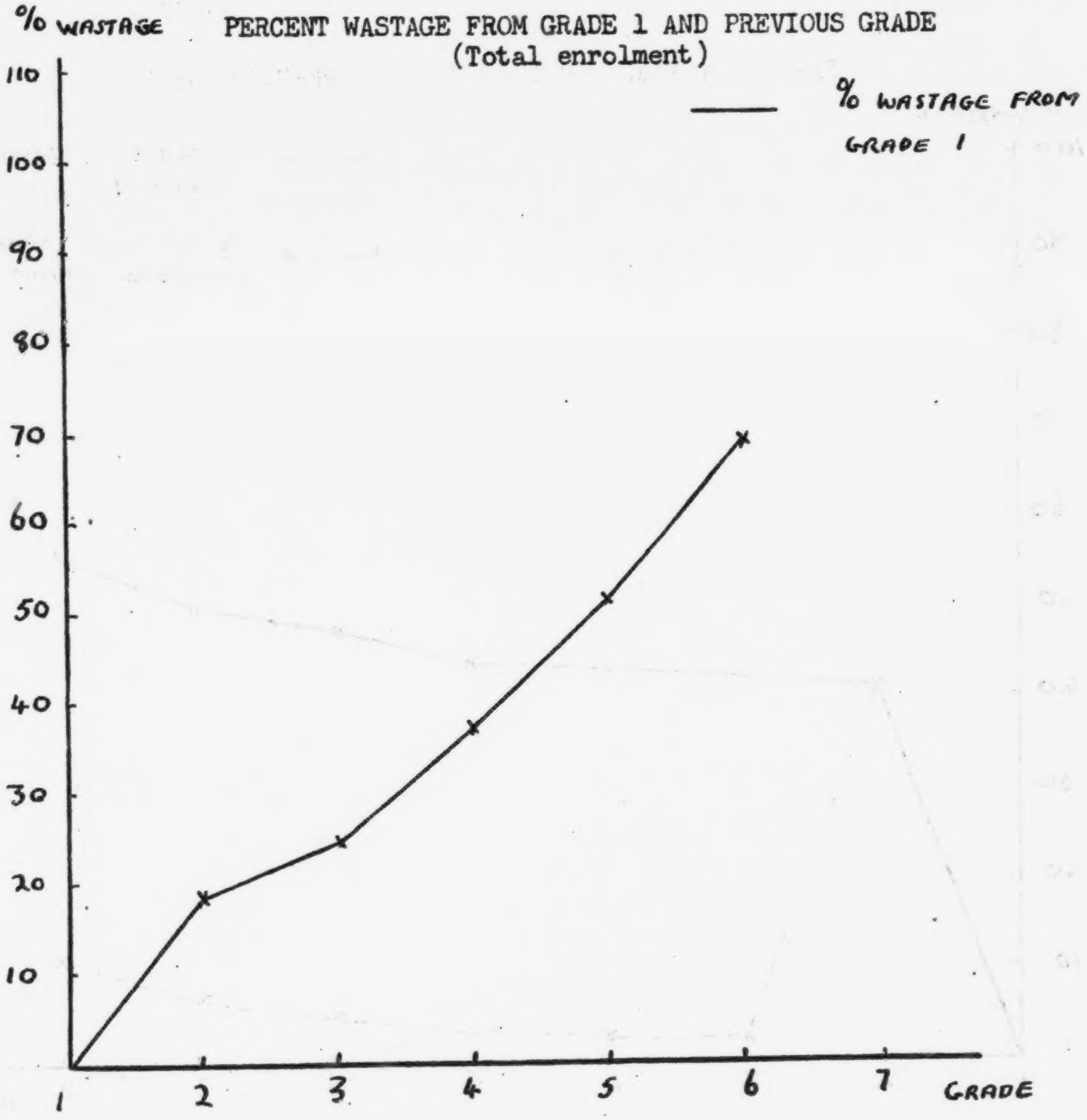
. Grade 1 enrolment - 156,901

Figure 15

MALAYSIA

1950 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



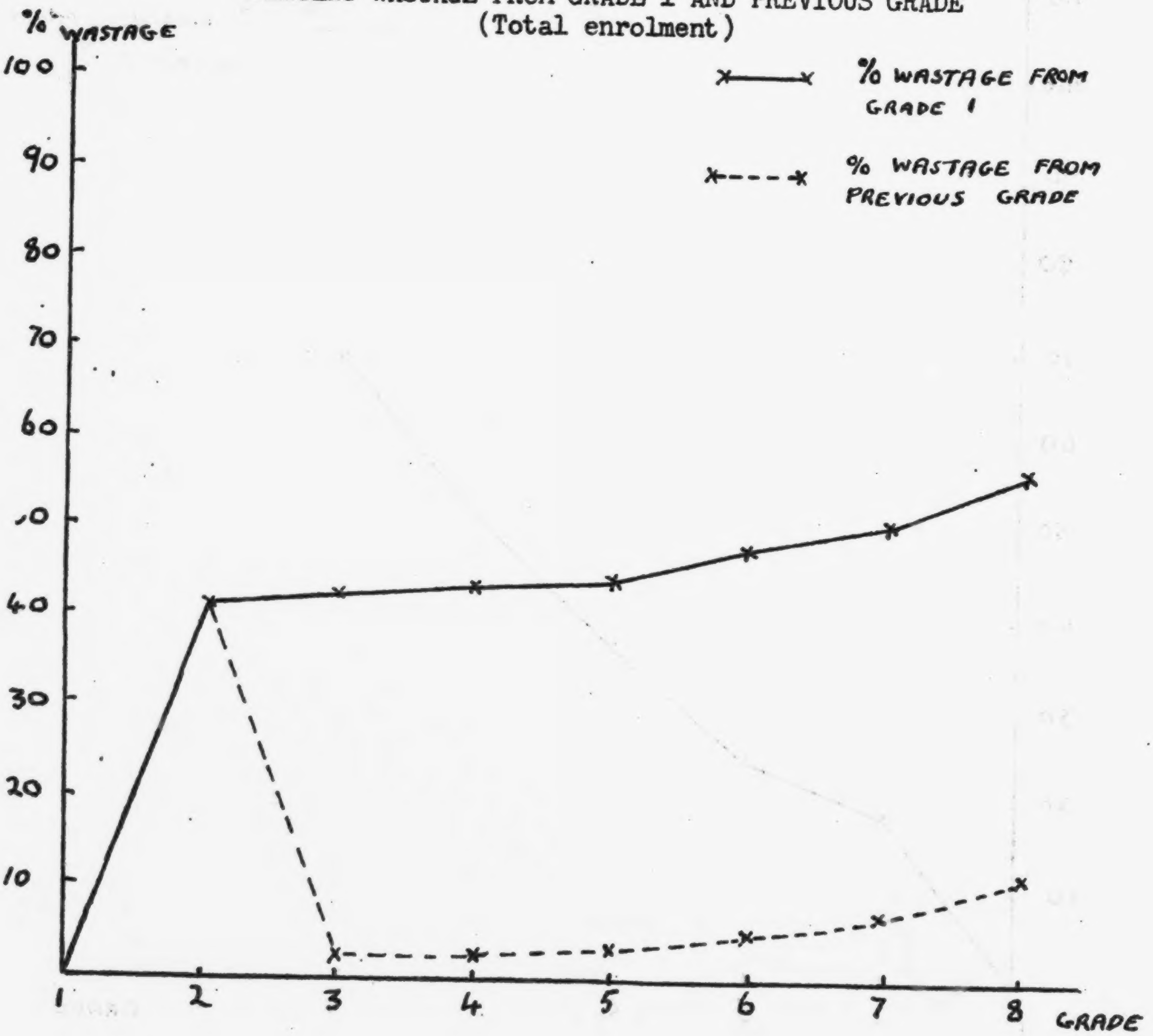
Grade 1 enrolment - (query)

Figure 16

NEWFOUNDLAND

1951 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



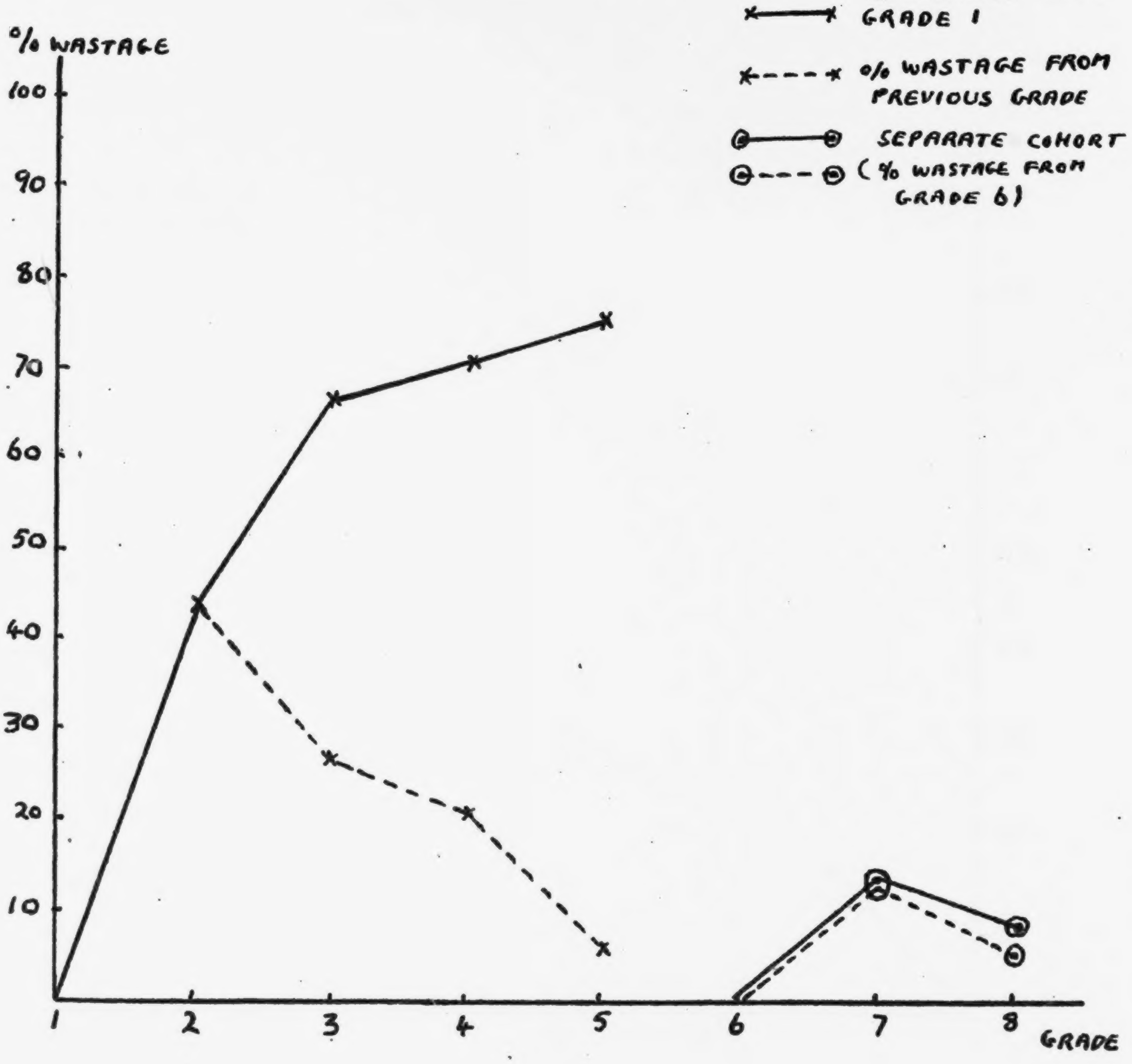
Grade 1 enrolment - 18 004

Figure 17

PAKISTAN

Partial Cohorts 1956 and 1958

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



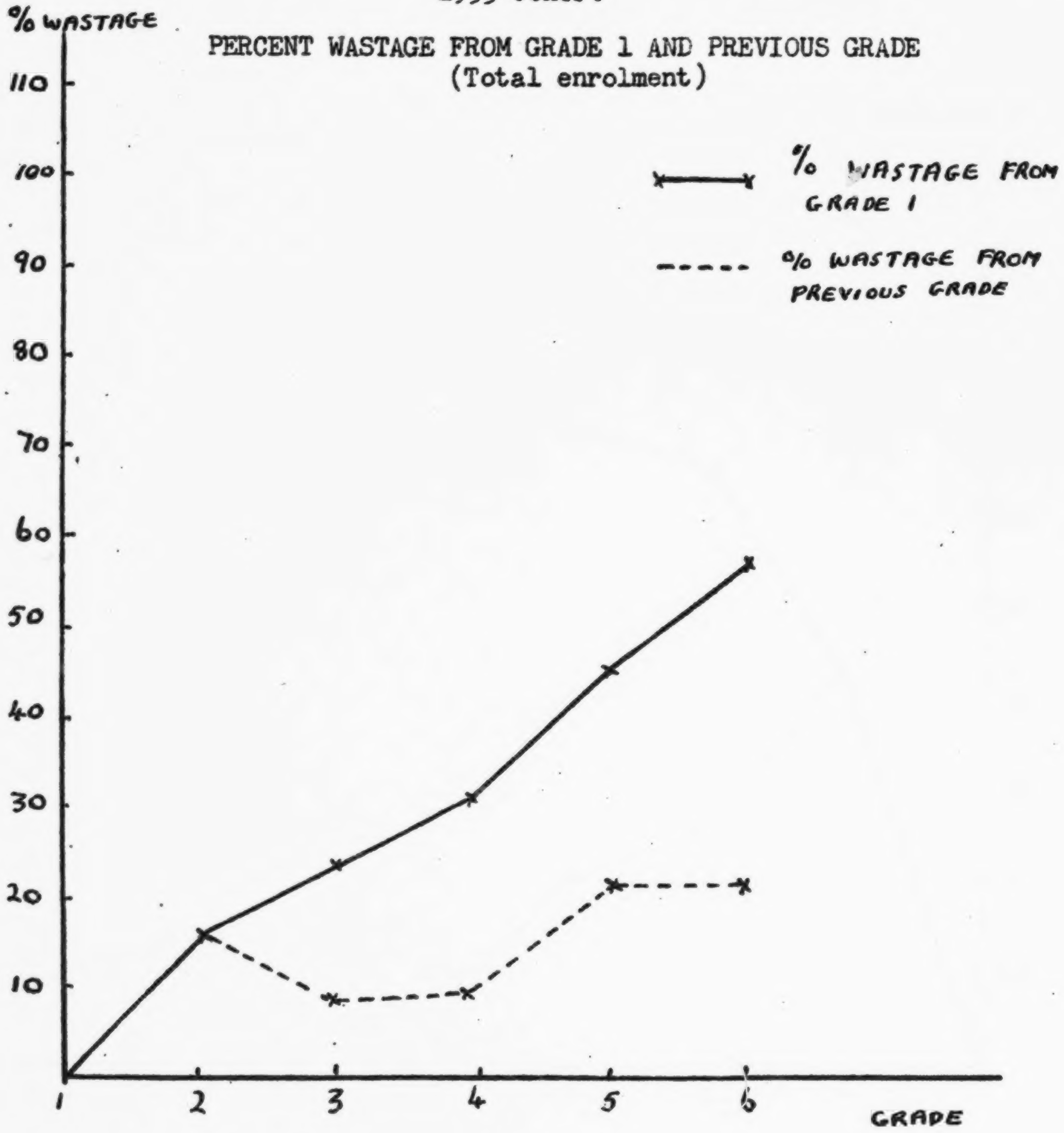
Grade 1 enrolment - 2017 000

Grade 6 enrolment - 269,000

Figure 18

PHILIPPINES

1955 Cohort



PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)

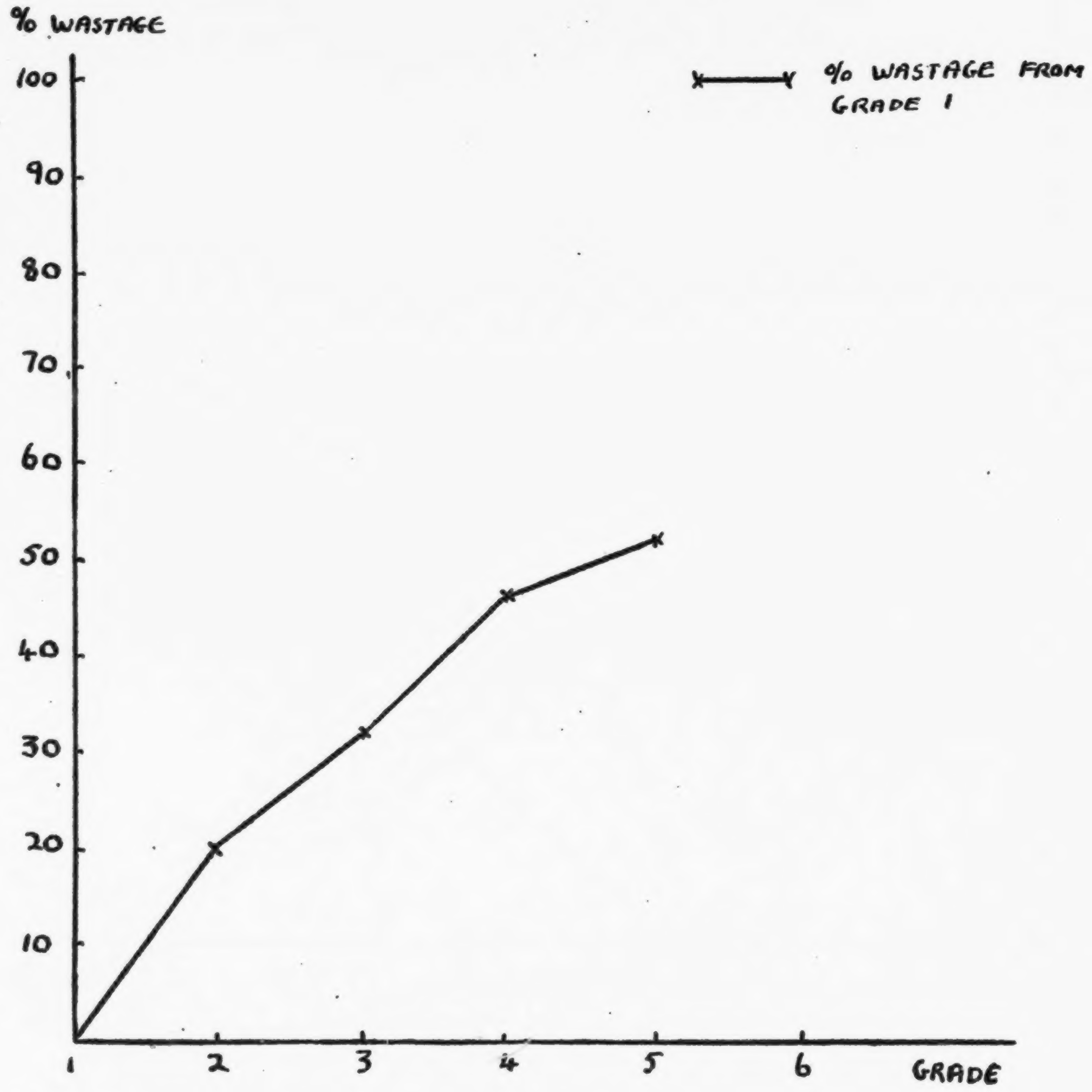
Grade 1 enrolment - 854,357

Figure 19

PERU

1951 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



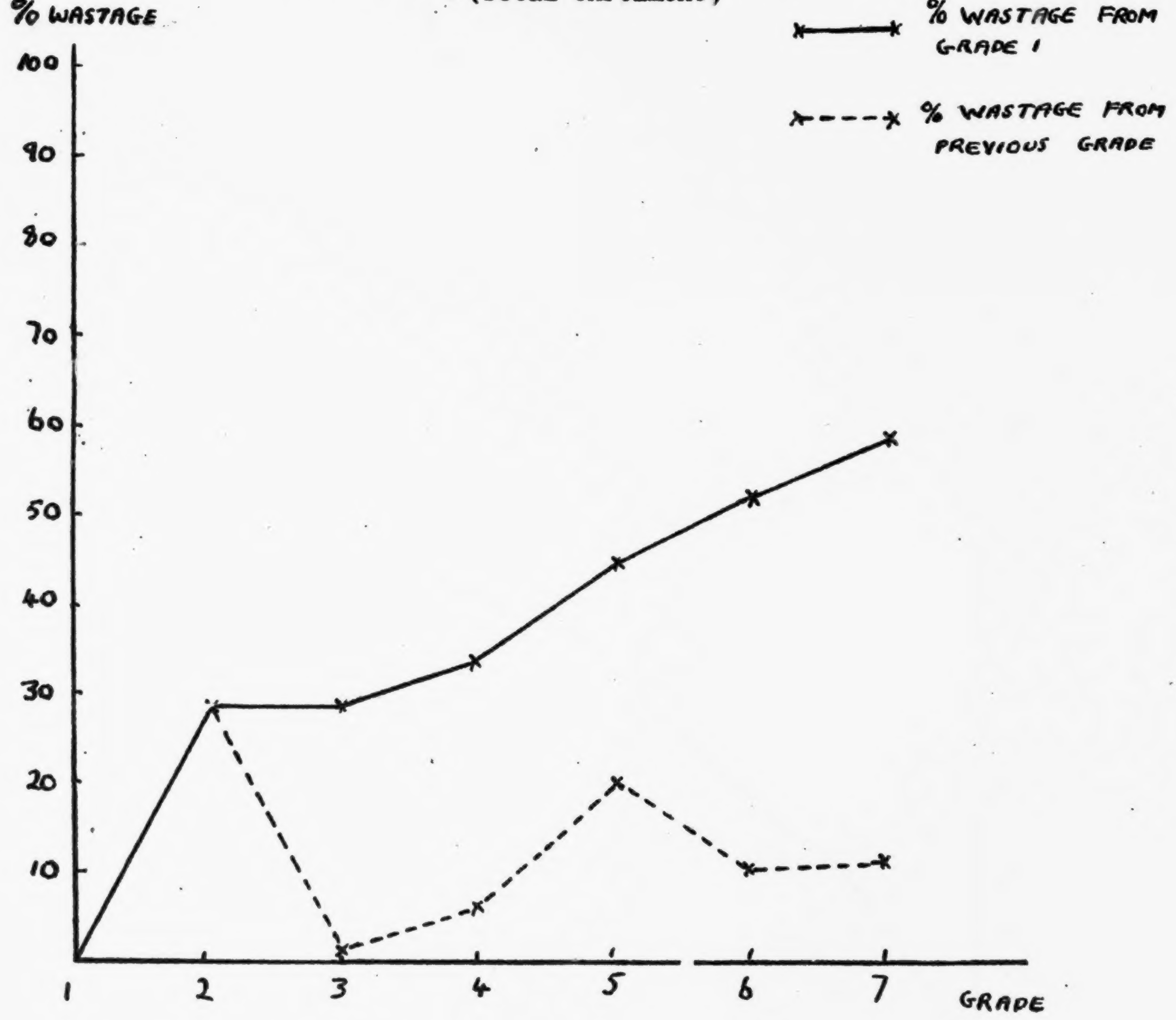
Grade 1 enrolment - (query)

Figure 20

SIERRA LEONE

1956 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



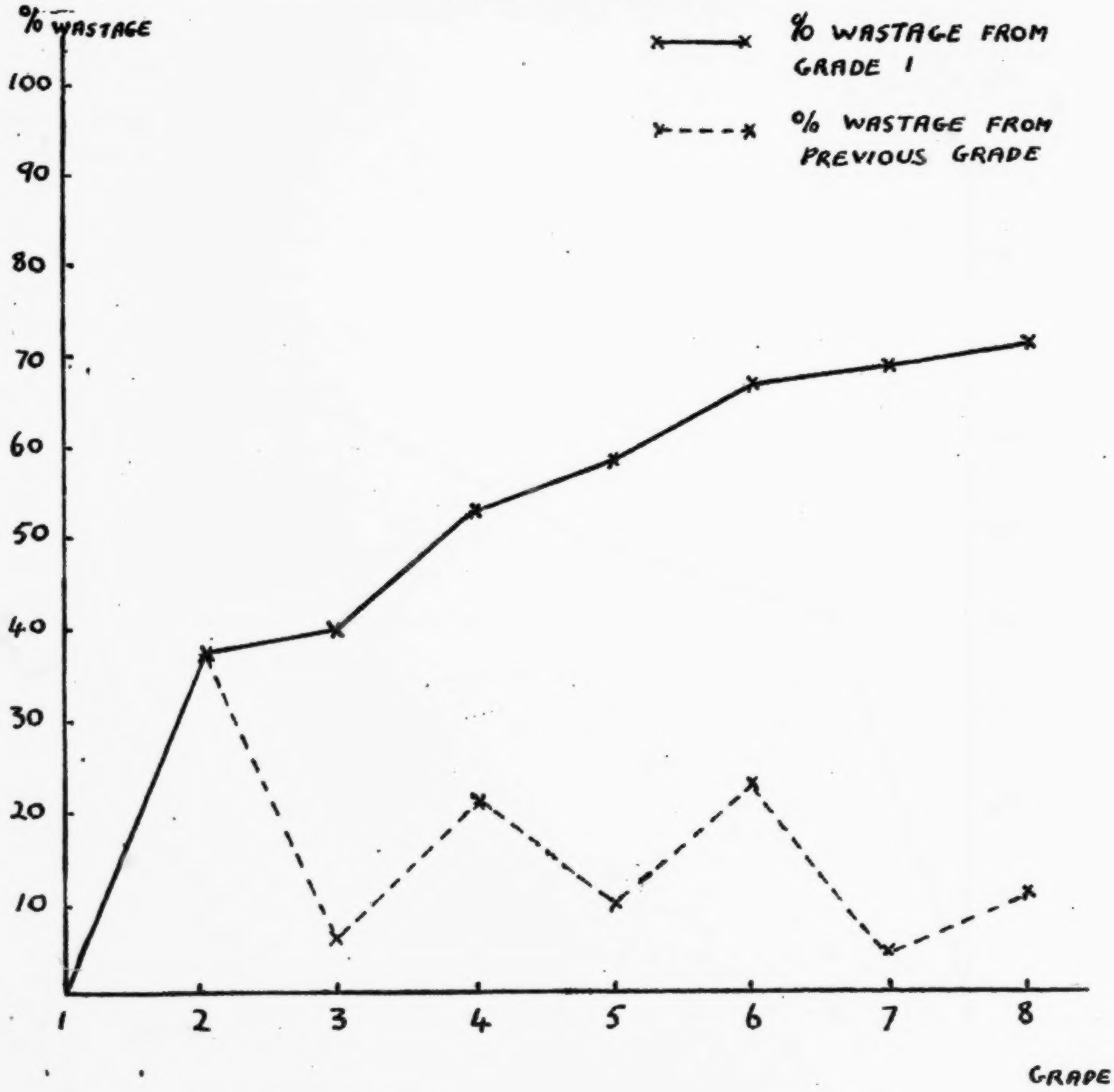
Grade 1 enrolment - 14,905

Figure 21

SWAZILAND

1957 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



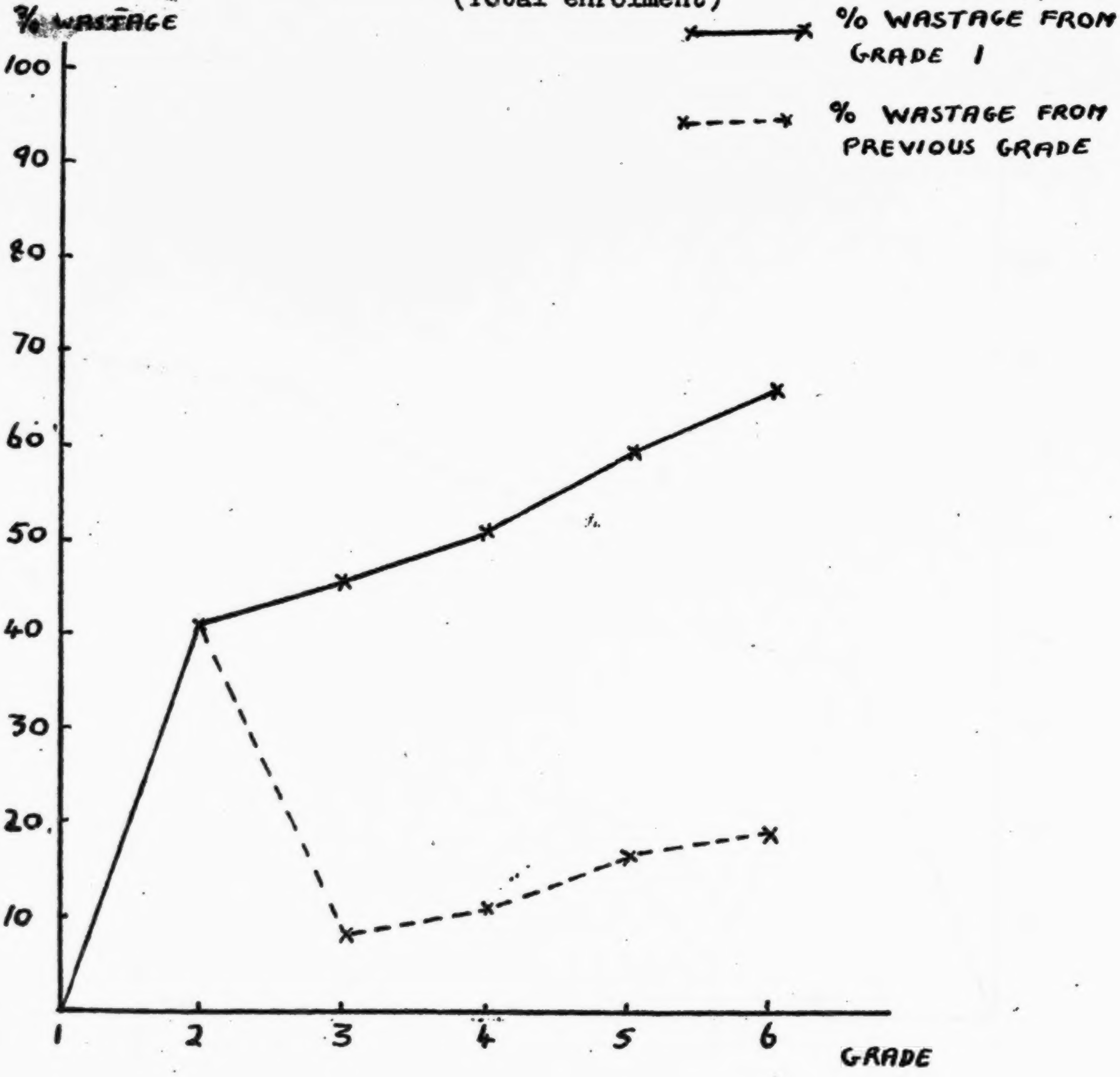
Grade 1 enrolment - 8 521

Figure 22

VENEZUELA

1956 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



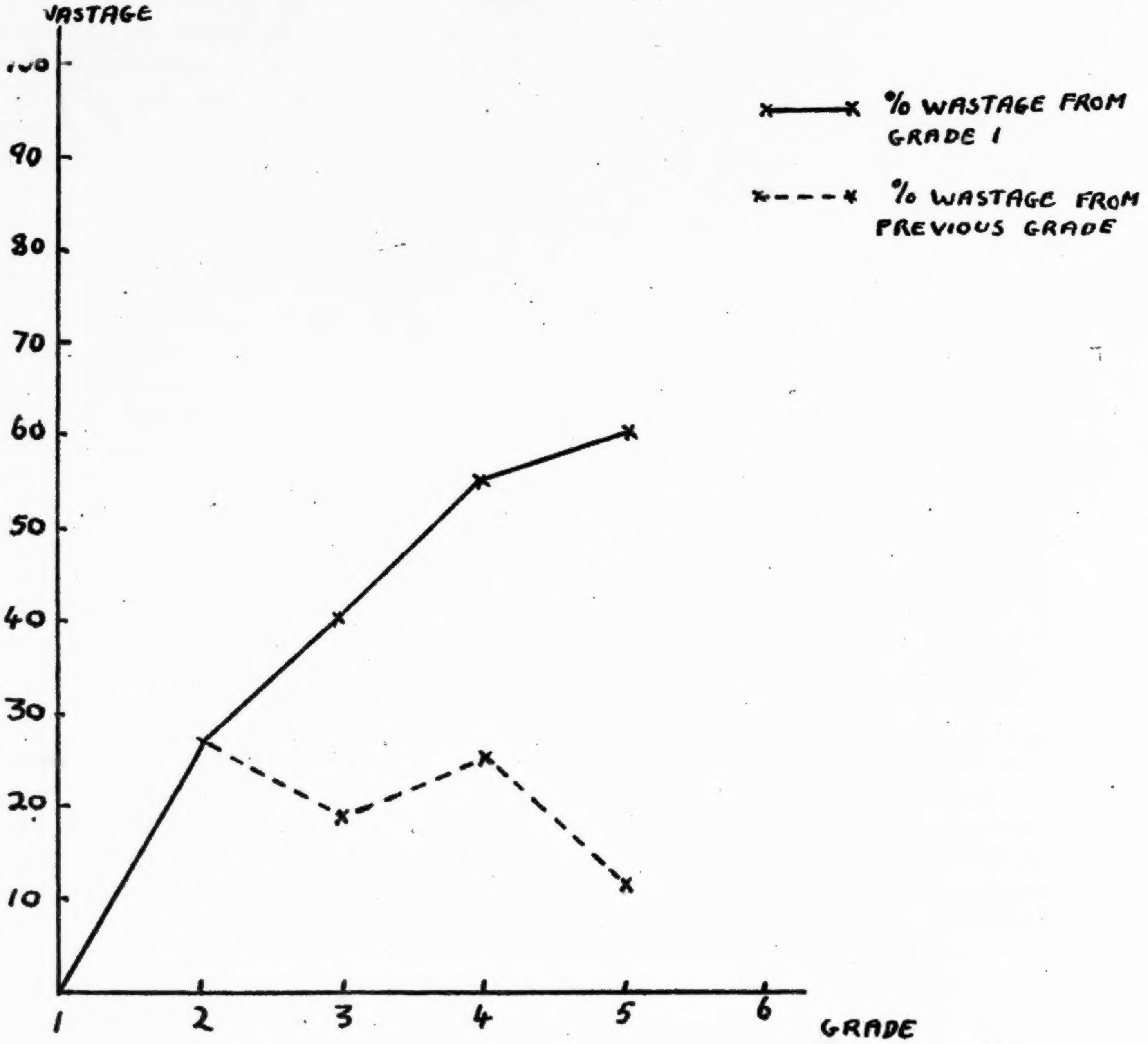
Grade 1 enrolment - 242,203

Figure 23

VIETNAM

1959 Cohort

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Total enrolment)



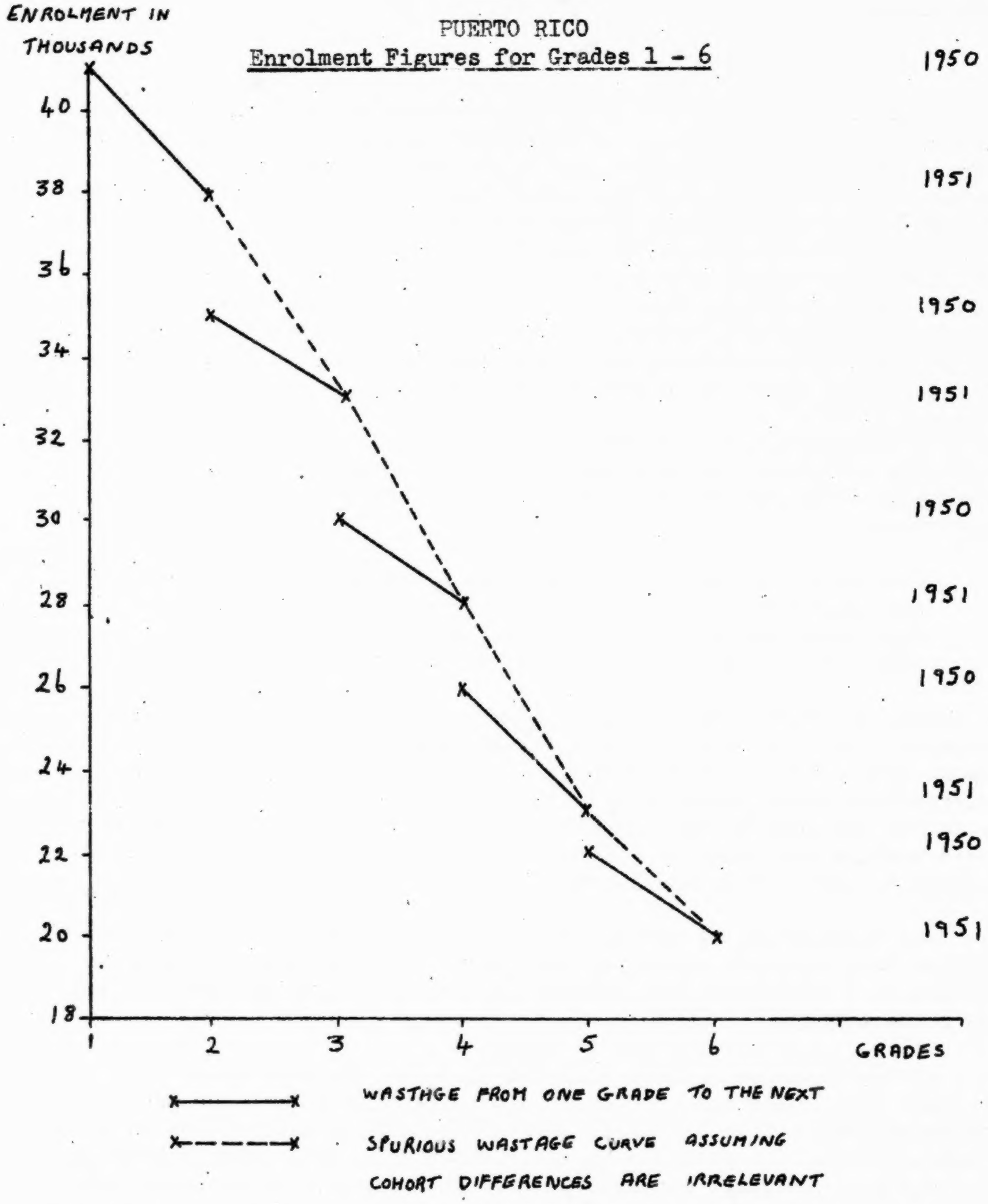
Grade 1 enrolment - 423.891

to the system at a later date. For example, it is estimated that in Basutoland male children come to school early in life and then drop-out for a long period of time when they are engaged in agricultural activities. In some cases they return at a much later age to the school system for further education. Nevertheless, cohort data have certain advantages. Firstly, they make it possible to estimate the degree of wastage which is occurring. Secondly, they enable us to pin-point wastage in terms of the most vulnerable grades. However, unless it is possible to examine a number of cohorts for any one country trends cannot be identified, nor can it be stated whether large wastage in any particular grade is a freak occurrence or the reflection of an established pattern. Thirdly, the availability of several cohorts enables us to measure the effectiveness of a change in governmental policy, or to note any gradual changes which are occurring and may suggest that wastage is becoming greater or less. One further advantage of cohort data is that it makes it possible to estimate the cost of wastage. This can be done in terms of the average number of pupil years required in order to get one pupil through the elementary cycle. Obviously data in terms of pupil years can be related to financial outlay for any particular country. One further comment is relevant on cohort data at this stage. In a number of countries the complete cohort data may not be available and the estimates of wastage have been based on several partial cohorts. For example, in Puerto Rico there is cohort data for all grades of primary education (Figure 24). This particular figure has been made up from several partial cohorts. In such a case, although wastage data for each set of two grades can be compared, it would not be possible to estimate overall wastage nor the gradual change in wastage figures throughout the school cycle, nor is there the possibility of calculating trend data. Wastage figures based on such material can be extremely misleading, for although in some cases it may be possible to adjust figures when there is a change from one cohort to another, this cannot be done satisfactorily in countries where there is likely to be rapid changes in enrolment or wastage rates. It is worth nothing that the spurious wastage curve obtained in Figure 24 is very similar to the expected pattern despite the fact that there may be considerable quantitative error.

When there are several cohorts available it is of value to plot these graphically for each grade in relation to the first grade of each particular cohort. Thus, we may have percentage enrolment for grade 2 over a number of years, say 1947, 1948, 1949, 1950 and 1951, grade 3 percentage enrolment for the same cohorts and so on. If the percentages for each grade are plotted and a graph line is drawn across the cohorts it enables us to see at a glance trends for any particular grade and, as mentioned above, the sudden change in the percentage of enrolment as a result of government policies, e.g. compulsory enrolment.

Figure 24

PUERTO RICO
Enrolment Figures for Grades 1 - 6



. Data drawn from material presented at a Conference on Free and Compulsory Education in Arab Countries, Cairo 1955. Adapted for demonstration purposes.

Some Examples of Cohort Data

Total cohort figures.

Reasonably good cohort data have been collected from twenty-one countries. Six of these are in South-East Asia, three in Central Asia, five in Africa, six in Central and South America and one in North America. An examination of the cohort curves felating wastage to percentage loss from the first grade indicates that, in many cases, there is a large percent wastage at the end of the first year, and this wastage continues to increase over succeeding grades. Examination of the material showing percent wastage from one grade to the next indicates that most of the wastage occurs between grade 1 and 2. This is not always the case, and higher percent wastages have been recorded between other succeeding grades, though numerically the wastage may be much less.

Graphical material shown in Figures 3 - 23 has been categorised on the basis of percentage loss and is described below. Categorisation of percentage loss over the total period indicates that out of twenty countries:-

five countries showed a total cohort wastage at or above 76%;
ten countries showed a total wastage of between 51 - 75%;
four countries showed wastage netween 26 - 50%;
only one country showed a total wastage of less than 25%.

It should be remembered that this loss includes repetition as well as drop-out. All the Central and South American countries included in this report have a total cohort wastage above 51%, although in the other geographical areas there is a fairly wide distribution. However, the countries included in this sample are not in any way representative of world wastage and there is a marked tendency in the present sample for wastage to occur above the 50% level.

An examination of wastage rates between grade 1 and 2 shows that initial loss in eight countries was 25% or less; in eleven countries between 26 - 50%, while the initial loss in two countries was 53% and 54% respectively.

An examination of loss from one grade to the next shows that the greatest percentage loss occurred in the first grade in fourteen countries, while five countries showed greater percentage loss in other grades. It was not possible to analyse the data from other countries for reasons which will be given later. When grade 1 is excluded from the examination it is seen that there is a fairly wide scatter of large scale loss in other grades. Four countries show their greatest loss between grade 2 and 3; three countries show it between grade 3 and 4; a further four countries have their greatest loss between grade 4 and 5, and six countries between grade 5 and 6. Only one country has the greatest percentage loss between grade 7 and 8. However, it should be remembered that most systems of elementary education contain no more than six grades and some have fewer. The number of grades present are recorded on the graphs. In summary therefore, it seems that most countries show their greatest percentage and numerical loss between grade 1 and 2. There is also a slight tendency for particularly high wastage to occur in the last grade of primary education, though it should be remembered that the present sample is highly selected and the tendency cannot be regarded as a significant trend. Seven countries lost between 0 - 25% of their children after grade 1, while thirteen countries lost between 26 - 50%. No country had a greater loss than 50% after grade 1. It would appear therefore that although a large loss does occur between grade 1 and 2, and in the majority of countries it represents the major loss, it should not be assumed that high losses do not occur at later stages in the school cycle. It is not possible to indicate any pattern in later loss since there is considerable variation between countries. Some examples of this variation may be of value.

In Newfoundland (Figure 16) where there is a 41% loss between grade 1 and 2, there is little loss at later stages, the highest percent being recorded between grade 7 and 8 where 11% of grade 7 enrolment is lost. Another pattern is produced in Swaziland (Figure 21). Here there is a loss of 37% between grade 1 and 2, followed by a pattern of alternating high and low loss between successive grades (grade 2 and 3, 6%; grade 3 and 4, 21%; grade 4 and 5, 10%; grade 5 and 6, 25%; grade 6 and 7, 5%; grade 7 and 8, 11%). A further variation is shown in the data from East Cameroon (Figure 4) where 40% is lost between grade 1 and 2, and thereafter the amount of loss successively decreases (grade 2 and 3, 27%; grade 3 and 4, 11%; grade 4 and 5, 3%). A totally different pattern is shown in Iran (Figure 10) where there is a small loss between the first four grades (grades 1 and 2, 2 and 3, 3 and 4 are each of 4% or less), but loss rises to 19% between grade 4 and 5, followed by a drop to 10% between grade 5 and 6. A slightly different pattern is shown in Venezuela (Figure 22) where there is a large amount of wastage between grade 1 and 2 (41%), followed by a rapid decrease to 8% between grade 2 and 3, and a gradual increase in succeeding grades (grade 3 and 4, 10%; grade 4 and 5, 17%; grade 5 and 6, 19%).

Partial Cohorts

The data available from a number of other countries, such as Madagascar are collected from several cohorts. The difficulties presented by such data can be seen in Figure 14. Grades 1, 2 and 3 aremade up from the 1959 cohort and show a steep rise in wastage from grade to grade.

Grades 3, 4 and 5 are based on the second cohort which starts at grade 3 in 1959. Hence there is a sharp drop in the percentage loss, followed by a steep rise. This confusing picture results from not following the same pupils through the system. Such radical changes in percentage loss may indeed have been due to some drastic change in policy affecting the number of entrants at a particular stage. For example, the drop from grade 3 and 4 may have arisen through transfer, new enrolments, or a large degree of repetition. It is more likely to be due to differences in enrolments between different cohorts. It can be seen therefore that since this is a split cohort it is not possible to make any constructive statements on wastage which can refer to the grade structure of elementary education. Although many Mission Reports contain this type of data it is not proposed to examine them in this paper since they are believed to lead to unknown amounts of error and therefore no correction can be applied.

Sub-divisions of total cohort data

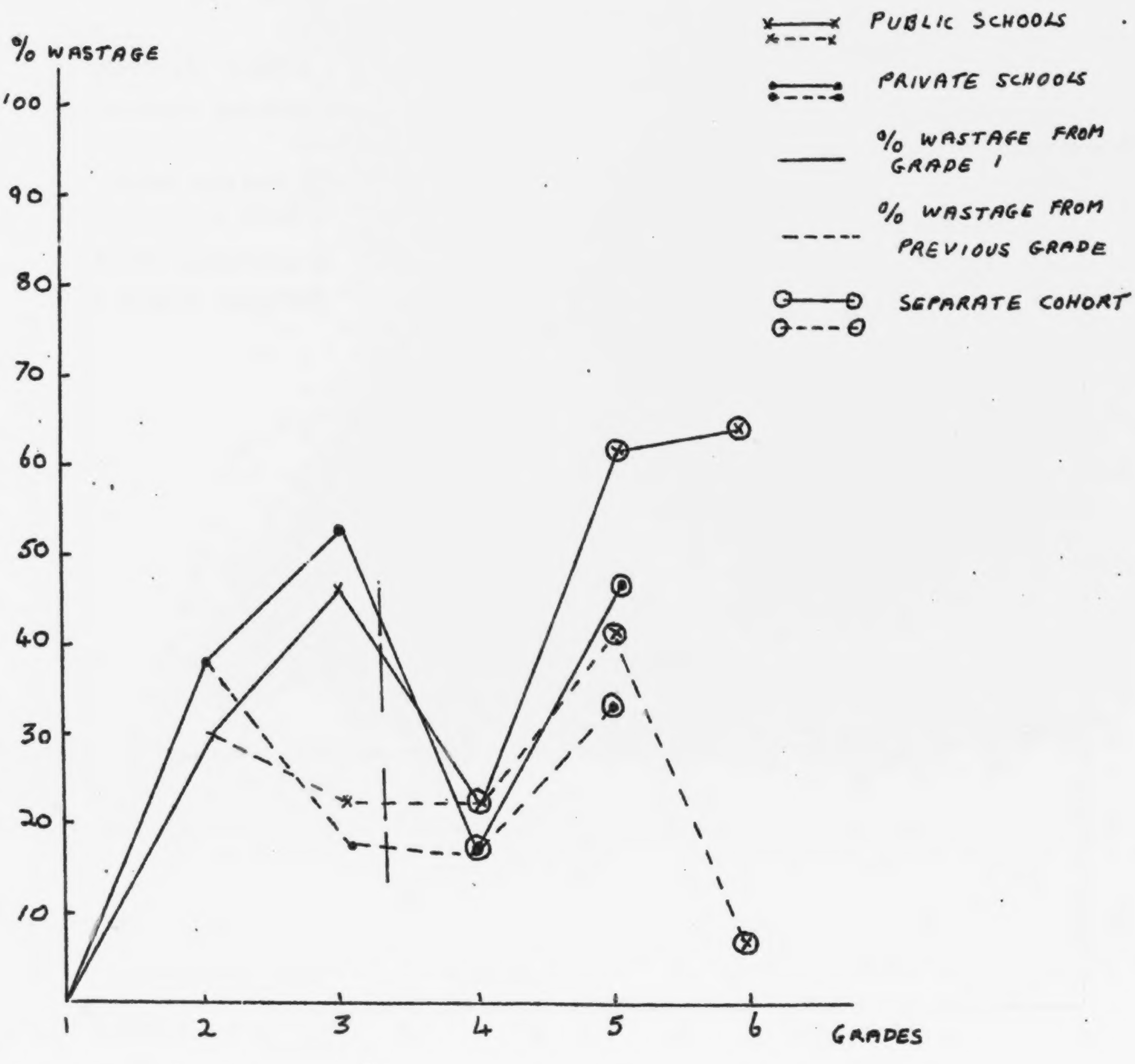
In some countries total cohort material is divided into two sections (e.g. public and private - Figures 25 - 27, male and female - Figures 28 - 33). Such data can be extremely useful. For example in Venezuela (Figure 27) it appears that the loss from public schools is very much higher than from private schools. The loss over the total period in terms of percentages is twice as high in the public as it is in the private schools. In addition the main difference between the two school systems occurs in the degree of loss between grades 1 and 2. This material shows the desirability of plotting wastage from previous grade as well as percentage loss from grade 1. It has been suggested that the discrepancy results from the differences between the children in the two types of school. One possibility is that pupils in the private schools come from stable economic backgrounds, and as a result their attendance at school is likely to be more regular. Their parents can afford, both economically and geographically, to send their children to school for a number of years. It should be noted that the numbers of children in the private school system are considerably less than those attending government schools (see Table 1). Such hypotheses require detailed examination, though graphical data of the type we have been considering does enable hypotheses to be put forward. It should not be assumed that other countries with public and private systems follow the same pattern, nor are similar explanations necessarily adequate. Generalisation in a field where there are many differences in variables is extremely dangerous particularly when raw data may be very inaccurate. In Korea the public and private systems show equal losses in terms of percentage with the exception of loss from grades 5 and 6, where the public system shows a steep rise in loss while the private system shows a large gain. This may be due to transfer from one system to another. It is important that graphical data of this knid should be linked to

Figure 25

MADAGASCAR

1959 Cohort

(Public and Private)



Public Grade 1 enrolment - 105,255

Private Grade 1 enrolment - 51,646

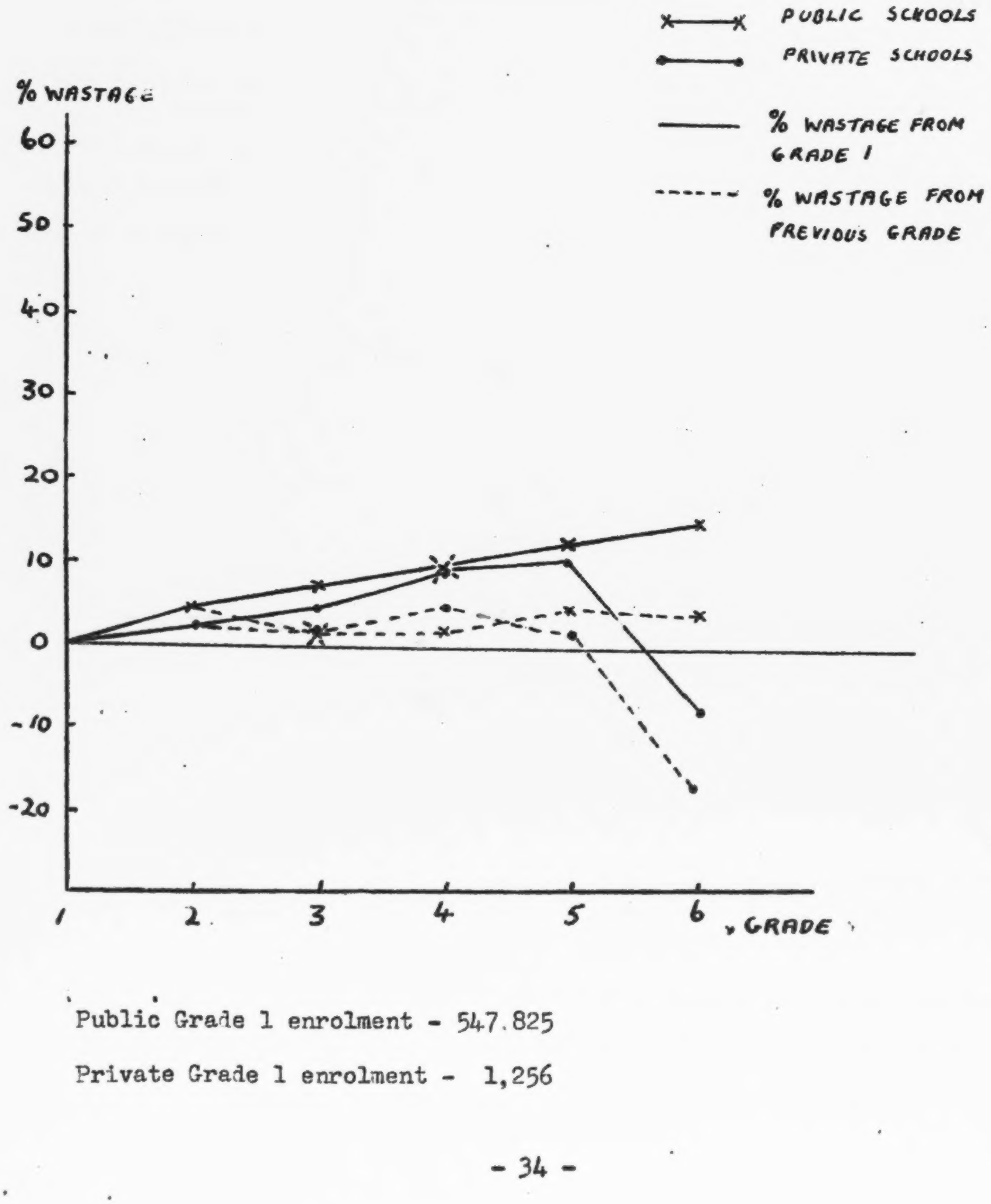
PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Sub-divisions)

Figure 26

KOREA

1956 Cohort
(Public and Private)

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Sub-divisions)



Public Grade 1 enrolment - 547.825

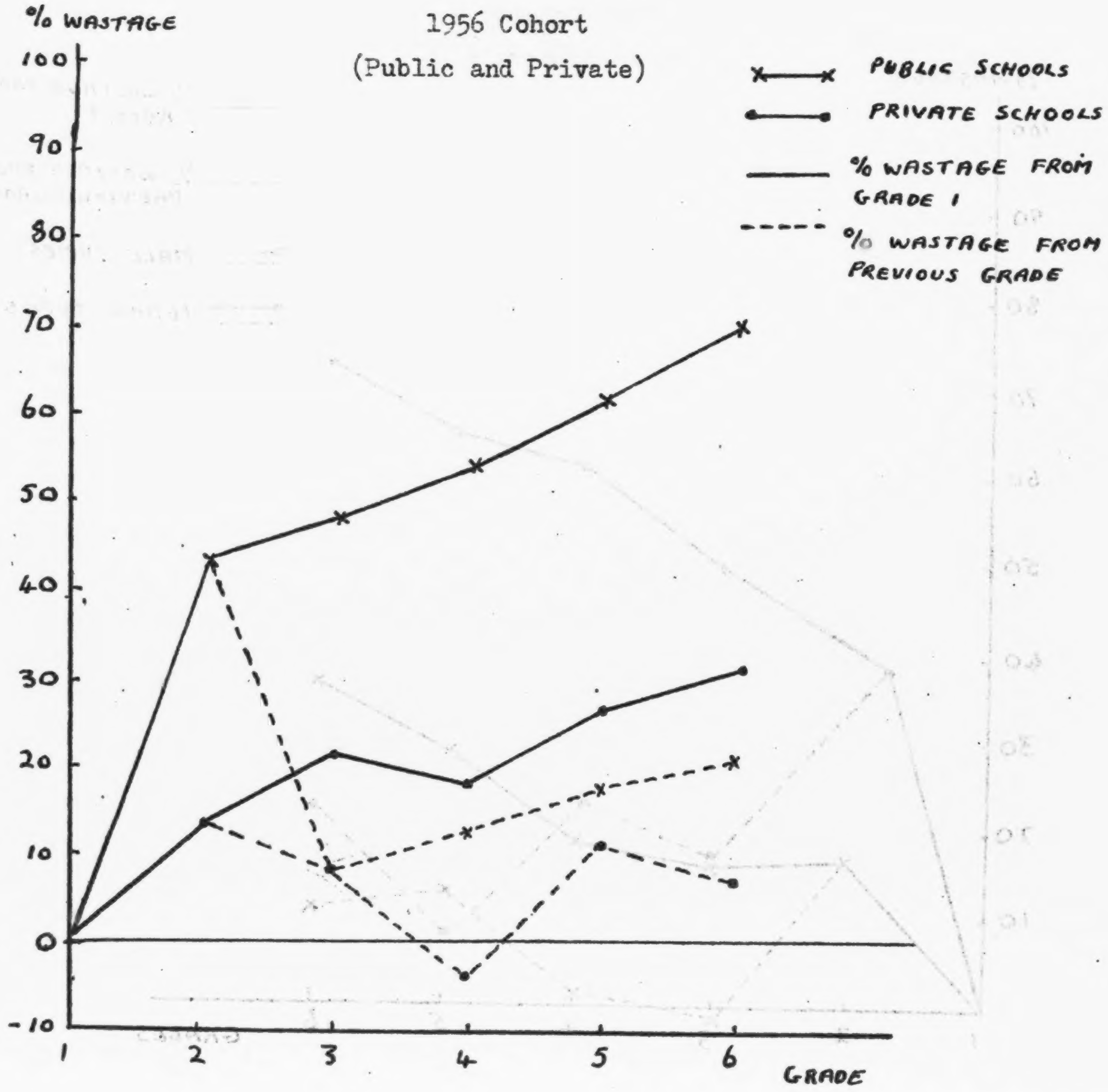
Private Grade 1 enrolment - 1,256

Figure 27

VENEZUELA

1956 Cohort

(Public and Private)



Public Grade 1 enrolment - 213,643

Private Grade 1 enrolment - 28,560

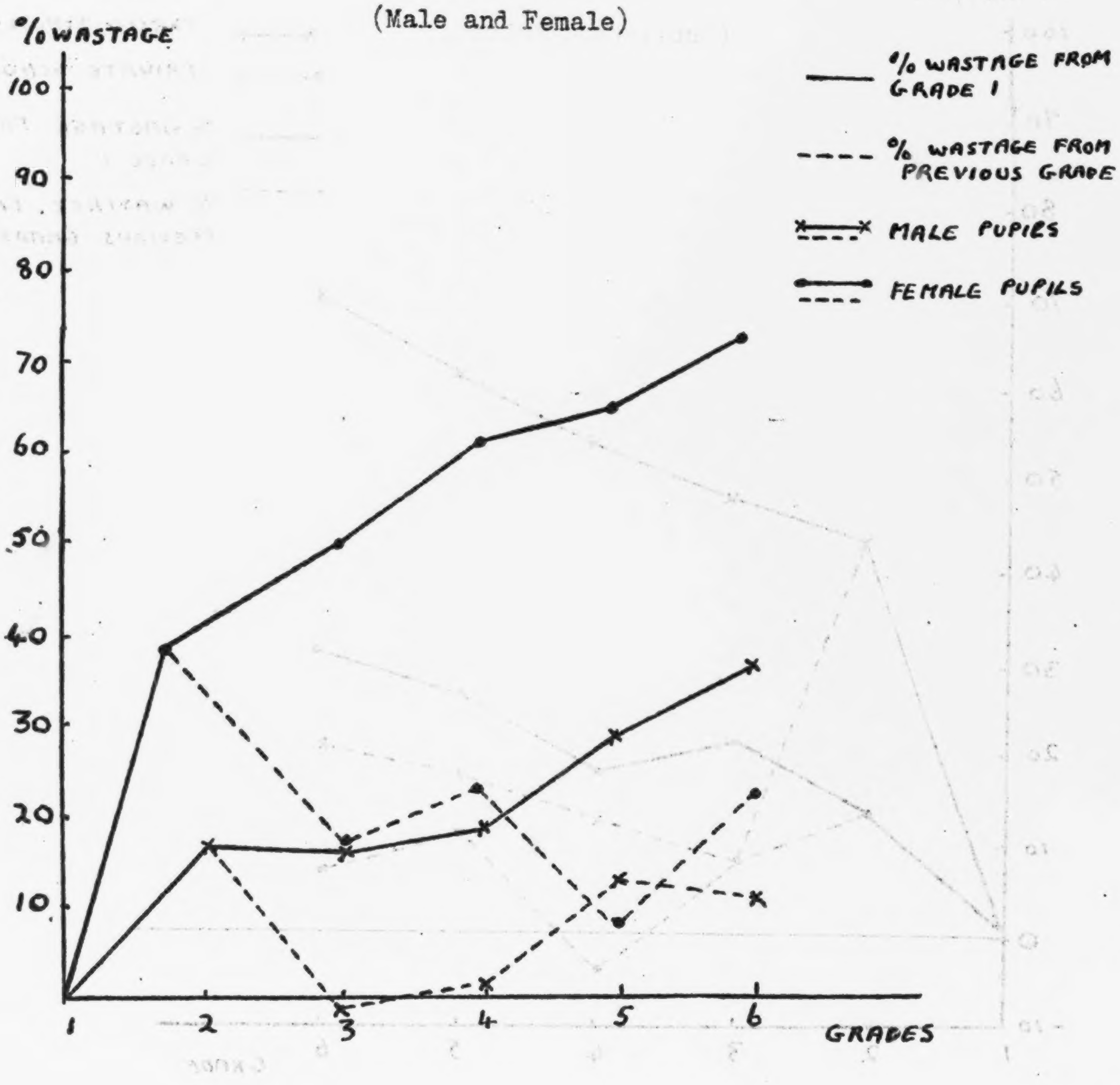
PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Sub-divisions)

Figure 28

CAMBODIA

1954 Cohort)

(Male and Female)



Grade 1 enrolment, Male - 50.200
" " " Female - 27.700

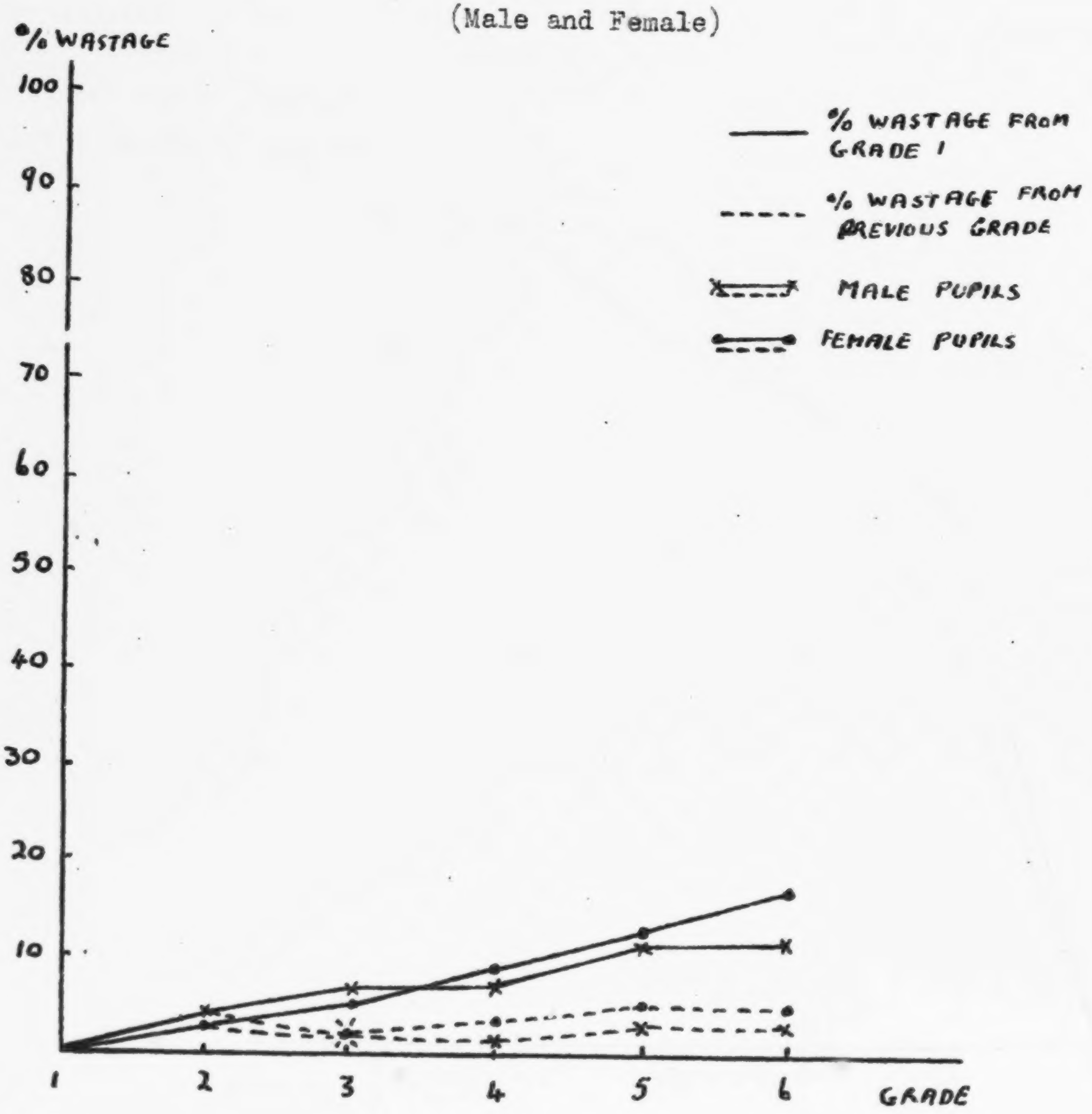
PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Sub-divisions)

Figure 29

KOREA

1956 Cohort

(Male and Female)



Grade 1 enrolment, Male - 310,977
" " " Female - 240,099

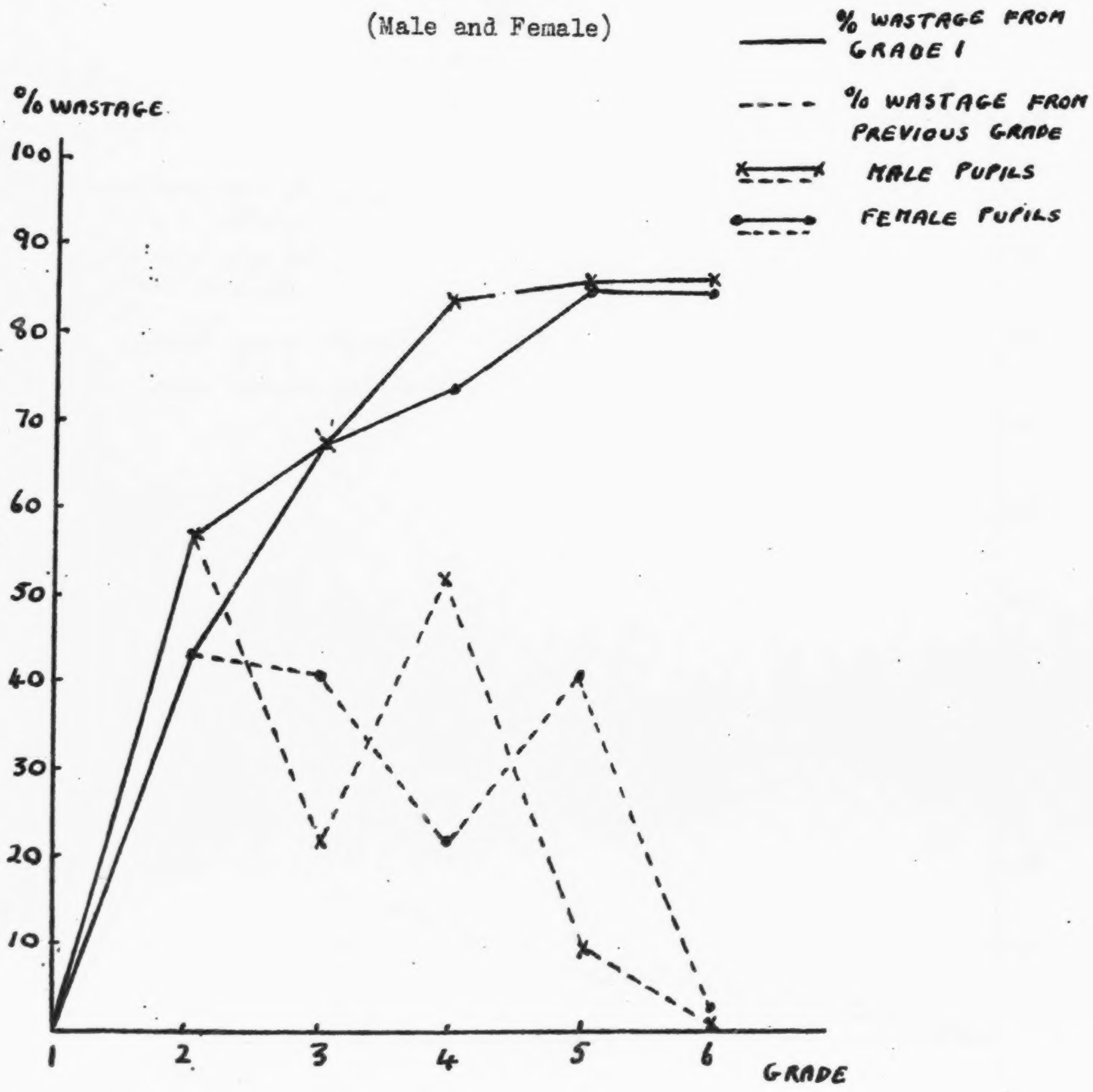
PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Sub-divisions)

Figure 30

LAOS

1958 Cohort

(Male and Female)



Grade 1 enrolment Male - 30.825
Female - 12.622

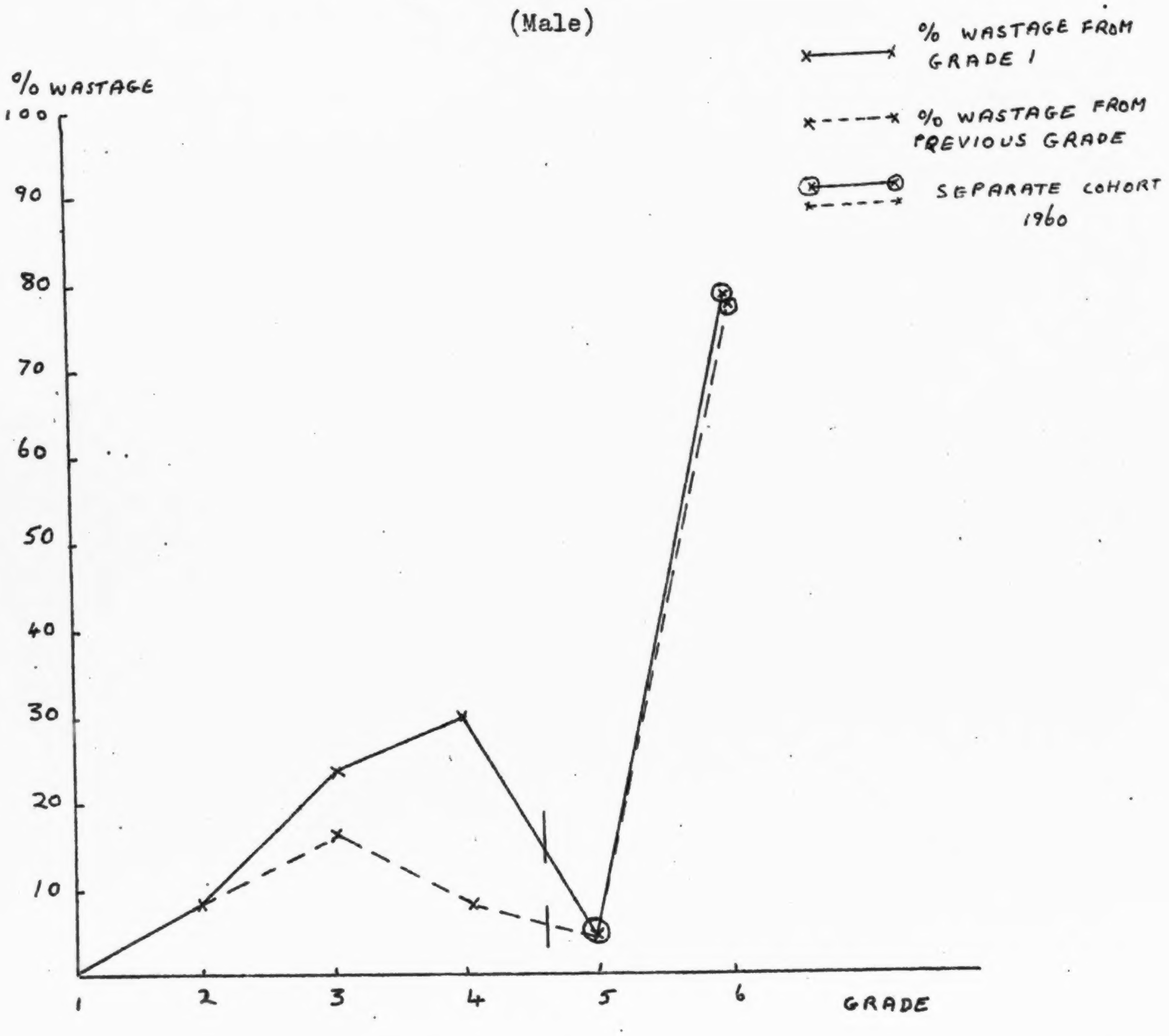
PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Sub-divisions)

Figure 31(a)

MALI

1956 and 1960 Cohort

(Male)



Grade 1 enrolment, Male - 11,169

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Sub-divisions)

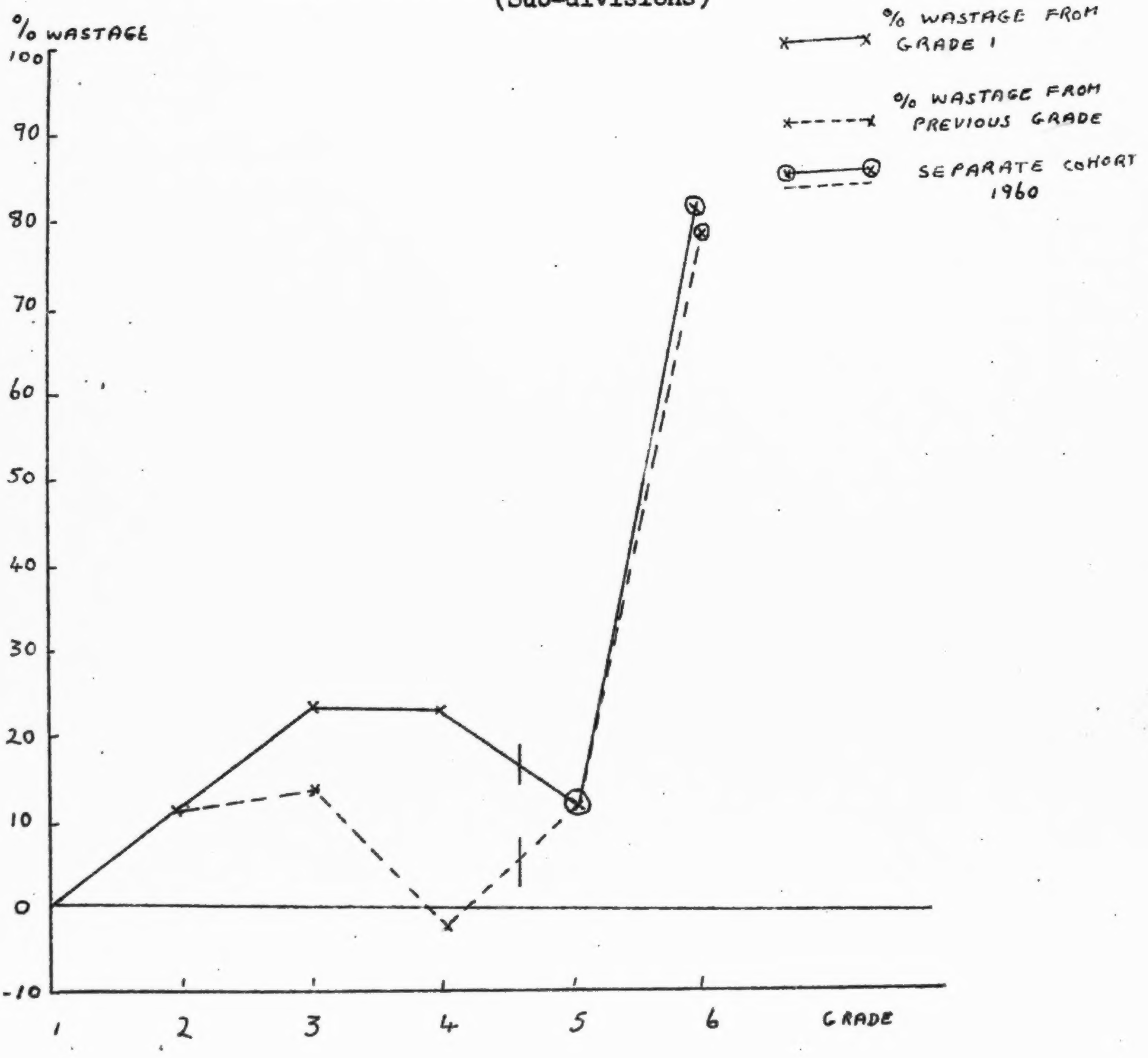
Figure 31(b)

MALI

1956 and 1960 Cohort

(Female)

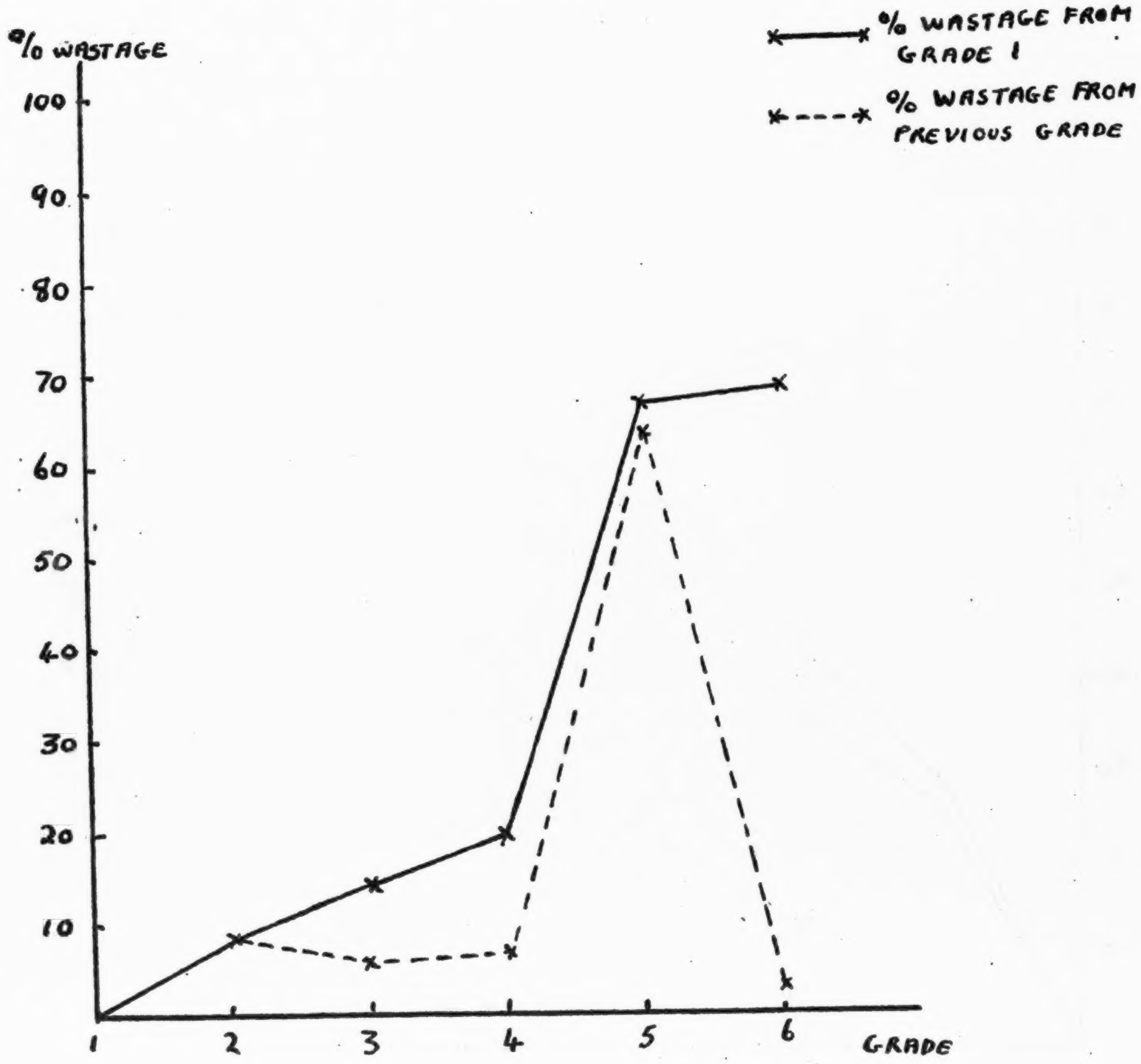
PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Sub-divisions)



Grade 1 enrolment. Female - 4.616

Figure 32

NORTHERN RHODESIA
1958 Cohort
(Female)



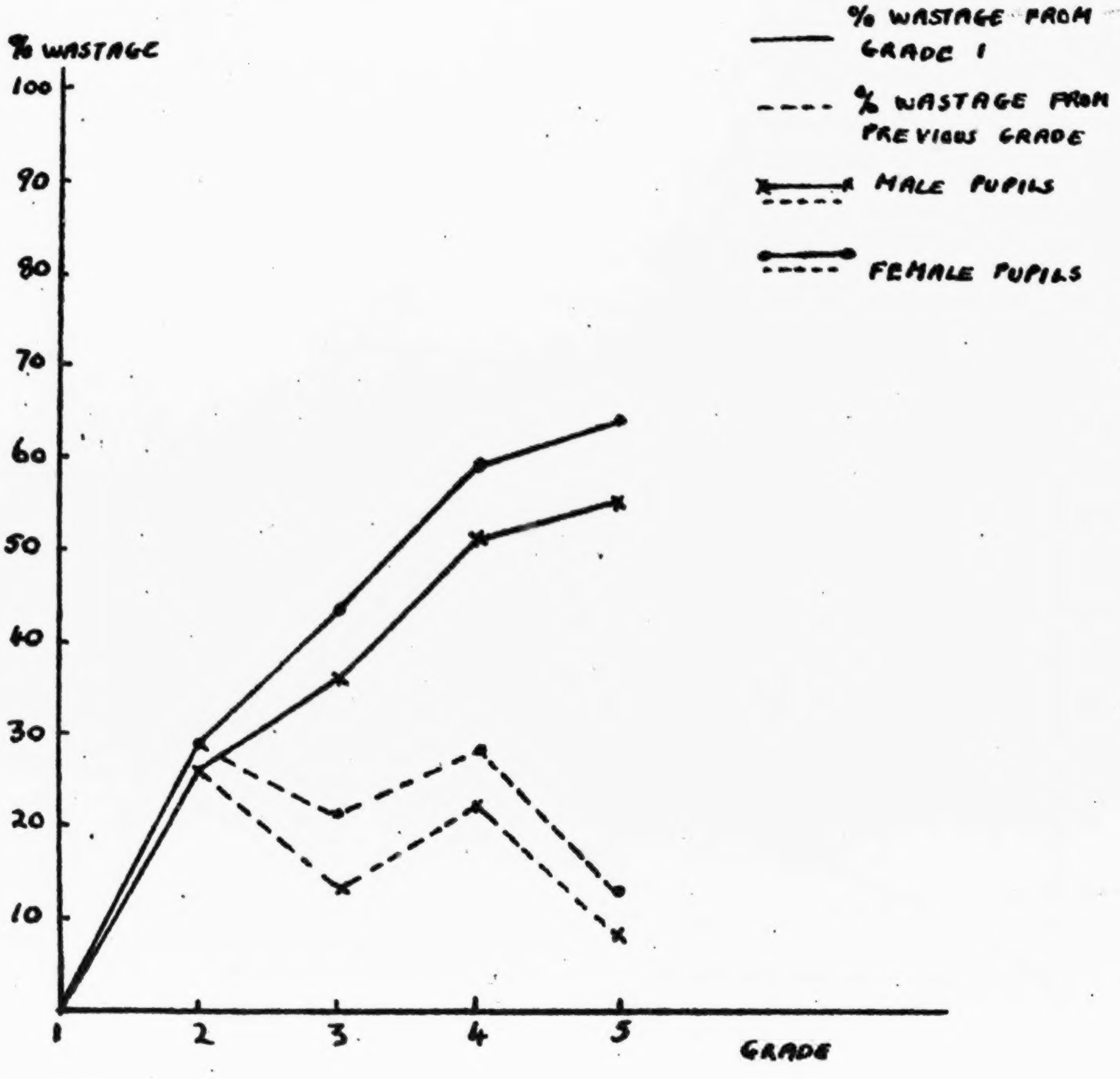
Grade 1 enrolment - 25,824

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Sub-divisions)

Figure 33

VIETNAM

1959 Cohort
(Male and Female)



Grade 1 enrolment, Male - 244.527
" " " Female - 179,364

PERCENT WASTAGE FROM GRADE 1 AND PREVIOUS GRADE
(Sub-divisions)

variations in the educational system, for transfer in itself is not a causal explanation of the figures noted above. It is possible that there are more private schools in rural areas, or there are few schools in public education with more than five grades. In other words if we are to make sense of cohort data a considerable amount of additional information is required. Nevertheless, this example represents one of the advantages of presenting cohort data graphically and indicates how a particular change in two systems may appear to be associated, thus giving rise to hypotheses which can be tested.

Sub-divisions of partial cohort data

Sometimes sub-system data present confusing patterns. For example, in Madagascar (Figure 25) the data available in the Mission Report enables percent wastage with reference to grade I to be plotted for six grades, though this is made up from two cohorts. The private system is shown to be superior in the first three grades, while the public system would seem to be more efficient in terms of holding power in the following three grades. The difference may be a reflection of the school system, but since the data is composed of two cohorts it could equally be the result of a change in educational policy. In addition, one of the half cohorts may represent transitional and artificial estimates of wastage in the public or private system. In other words we cannot really form any definite conclusions from this data except that there is a difference. To have had one of these cohorts complete, or both of them, would have enabled us to put forward definite suggestions. For example, if the private grade system had been superior throughout one cohort we could have put forward the type of hypothesis discussed under Venezuela. On the other hand, if there was a genuine change in percentage loss after grade 3 some differences in the school system, either in terms of selection, the type of schooling given or transfer across sub-systems, could have been investigated.

We now turn to male/female differences in cohort data. In Vietnam (Figure 33), for example, the division into male and female shows that there is slightly greater percentage loss from the female population throughout the cohort, though this difference is only 2% between grades 1 and 2 (28% female, 26% male). In Mali (Figure 31) male/female loss is approximately the same in the first grades, but in grade 3 male loss is very much greater than female. Laos (Figure 30) shows some variation though the overall male/female percentage difference is very similar to the Mali data. In Cambodia (Figure 28) there is much greater percentage loss in females than males. Between grades 1 and 2 the female loss is 39%, while the male loss is only 17%. Here again certain hypotheses can be put forward on the basis of such data, and appropriate investigations carried out. Indeed one major reason for obtaining this data is to identify discrepancies and formulate exploratory hypotheses. For example, in some countries (e.g. Basutoland) male children are employed in agricultural activities at certain ages in their lives which may result in high initial attendance at school followed by drop-out. It should not be forgotten that such children may return to school at a later stage in their lives. When female loss is very low this may result from the fact that only a small number of females are sent to school and those present are a highly selected group. Such children may represent the most intelligent in their community and come from economically sound backgrounds. Not only do such children tend to remain at school, but they are less likely to repeat grades than children who are socially less fortunate. (See page 114). It is thus important not only to compare percentages, but to use them descriptively with raw data. The advantage of converting data to percentages, however, lies in the fact that we are then able to compare different countries in a more meaningful manner. It is seen therefore that hypothesis formulation in its simplest form requires certain minimal data and simple graphical description.

Comparison of Cohorts

Enrolment grade data over several years are available for a number of countries, and from these data several cohorts can be constructed for a particular country. Example are shown in Figures 34 - 43 where cohorts are plotted graphically. Data of this kind are often presented by showing the percentage retention at each grade level with reference to grade 1. (See Appendix 2 for raw data.) In the present data percentage loss is presented in relation to grade 1. The vertical axis shows percentage loss and the horizontal axis represents cohorts labelled by the grade 1 year. It may be helpful to consider the Cambodian data in detail. In Figure 34, grade 2 wastage for the 1950 cohort is 4%. At grade 3, in the 1950 cohort wastage in relation to grade 1 is 27%. By looking at different cohorts we can see changes in wastage at the same grade level. For example, grade 2 enrolments show a loss of 4% in the 1950 cohort. This rises to 25% in 1954, followed by a slight decrease. On the other hand, the loss for grade 5 is initially 61%, reducing to 50% in the 1955 cohort. The advantages of presenting data in this way are essentially twofold. Firstly, it is possible to see at a glance changes in overall wastage percentages from year to year. That is, changes can be seen at any grade level over a period of time so that the effect of changes in policy, school administration etc. can be followed in terms of their effects on wastage. Secondly, it can be seen that columns indicate the percent wastage in any one cohort. For example, in the 1950 cohort, grade 1 is 0%, grade 2 is 4%, grade 3 is 27%, grade 4 is 55%, and so on. Thus, theoretically, the same children can be followed through their school cycle. Unfortunately data of this type has a number of limitations. It does not enable us to compare loss as a percentage of the previous grade and therefore it cannot show change in loss from the previous grade over a number of cohorts. We cannot see, for example, whether a change in educational administration has reduced wastage from grades 3 and 4. We can, however, compare overall wastage between grades 1 and 6 over several cohorts. Grade 1 - 2 wastage can also be observed throughout, but intermediate grade wastage with reference to the previous grade cannot be traced by this method.

We can with advantage compare several cohorts over a period given. For example, in the Cambodian data we have six complete cohorts. They indicate that wastage was extremely high in the 1950 cohort, but very much less in the 1955 cohort despite the fact that initial wastage was considerably greater. It is apparent that in this case, the increase in wastage between grades 1 and 2 reflects greater number entering grade 1 and is likely to be associated with decrease in overall wastage, since greater competition at the initial stage will make attention less necessary in subsequent grades. This trend would only continue, however, until overall wastage was identical with wastage between grades 1 and 2, at which point the two graphs would rise together.

Very often data are presented in sufficient detail to break them down into male and female cohorts. For example, in the 1950 cohort, maximum wastage over the six-year cycle was 58% in males compared with 81% in females. (Grade 1 enrolments for the two groups were 24,000 and 9,000 respectively.) Over the years cohorts have shown less and less wastage in both sexes, though in the male group there was a slight increase in wastage in the 1954 and 1955 cohorts. It appears therefore that the trend to reduction may have been stopped and may in fact rise again in the male group. It is also apparent that initial wastage in the 1950 cohort for females was higher than for males, and though this is also true in 1955 for both groups the difference is proportionally less. Both groups show an increase in initial wastage and a decrease in overall wastage. It is of interest to note that the changes in wastage appear to be associated with increases in grade 1 enrolment, and the fact that differences between male and female wastage appear to be diminishing may be a reflection of the proportionately larger increase in female than male grade 1 enrolments. This underlines the importance of linking percent wastage with enrolment figures, since on their own percentages may disguise a radical change in enrolment policy.

Much of the data provided by Mission Reports do not show consistent trends, though some countries do appear to show reasonably linear reductions or rises in enrolment or wastage over the years. Newfoundland and Swaziland (Figures 39 and 41) both show consistent drops in initial and overall wastage over a series of cohorts. Further analysis of this data perhaps indicates the value of plotting information, not only in terms of percent wastage in relation to grade 1, but also in terms of wastage from the previous grade. A glance at Newfoundland figures for percent wastage from grade 1 can be misleading. It shows the graph lines dropping rapidly in terms of percentage loss. When the figures are plotted for wastage from the previous grade (Figure 46) it becomes apparent that the main change has been a drop in wastage between grades 1 and 2, whereas grades 4, 6, 7 and 8 have remained relatively constant. A further example may help to clarify this point. In Vietnam (Figure 43) the wastage figures at the grade 5 level relative to grade 1 in cohorts 1956, 1957, 1958 and 1959 show a progressive increase in wastage. At the grade 2 level there is also a rise in wastage from 8% in the 1956 cohort to 27% in the 1959 cohort. On the other hand, when one looks at wastage from previous grade (Figure 48) it is found that there is a steep rise due to wastage at the grade 2 level (i.e. between grade 1 and 2) and that the figures for wastage at grade 4 show a gradual decrease from one cohort to the next, while wastage at grade 5 (i.e. wastage from grades 4 to 5) is virtually constant. In other words the problem of Vietnam appears to be a large initial wastage. The graph showing wastage from previous grade helps to pin-point this more clearly than the graph showing wastage from grade 1.

Further interesting points arise from the examination of male/female wastage in Vietnam (Figures 53 and 54). Overall male wastage (i.e. grade 5 compared with grade 1) rises from 41% in the 1956 cohort to 55% in the 1959 cohort. On the other hand wastage at grade 2 rises from 6% to 26%. Comparable data for female cohorts shows an overall wastage of 61% rising to 65%, and an initial wastage between grade 1 and 2 rising from 12% to 28%. Thus, male wastage, which was initially very much lower than female, increased until in the 1959 cohort it was almost exactly the same as female wastage. Thus, by breaking down data into its component groups over a series of cohorts variations in change can be observed which would be quite impossible when using global statistics. It is suggested that the significance of wastage data can only be understood by an examination of its parts. Overall figures are likely to be misleading and possibly lead to wrong conclusions. Much of the cohort data do not show very clear trends, but where there is a consistent pattern then it is possible to predict wastage in future years. Obviously this is extremely important, since it makes possible some estimate of enrolment figures and the degree of wastage, and from these figures estimates of the cost of educational wastage can be made. However, here again it is suggested that the trends need to be broken down into their component parts.

Repetition, Withdrawal and Promotion

So far we have seen the advantages of using cohort data and have shown how there is a large degree of wastage in the first year of primary education. Furthermore, wastage may increase to well above 50% by the time grade 6 of the same cohort is reached. Such figures do not give an adequate picture of wastage because a number of children repeat particular grades and thus remain in the school system. The use of cohort data alone for estimating wastage assumes that children are either promoted or drop-out of the school system. Since this is not the case, education departments need to supply promotion, drop-out and repetition figures for each grade within a cohort.

The promotion, repetition and desertion rates for the different grades in primary education in Venezuela are given for official and private schools. A glance at Table 2 shows that for three cohorts in 1955/1957 there is a much greater promotion rate at all grades for children attending private schools than for those attending government schools. (See example in Figures 55 and 56.) Desertion rates are very small in the first two cohorts of the private school cycle, but in the third cohort there is evidence of some increase in desertion rate and a corresponding decrease in the official school cycle figures. This is an example of the tendency for sub-system changes to cancel one another out. It will be noticed that some of the desertion rates are given as minus quantities and this is probably the result of transfer from official to private systems. There is some evidence that the type of child attending private school comes from a home where the parents are more wealthy and are able to afford attendance at school. This, of course, also reflects the nature of the parents' employment and possibly the types of areas in which the children live. It is important to note that the number of children receiving private education is very small compared with those receiving education from government schools. (See Table 1)

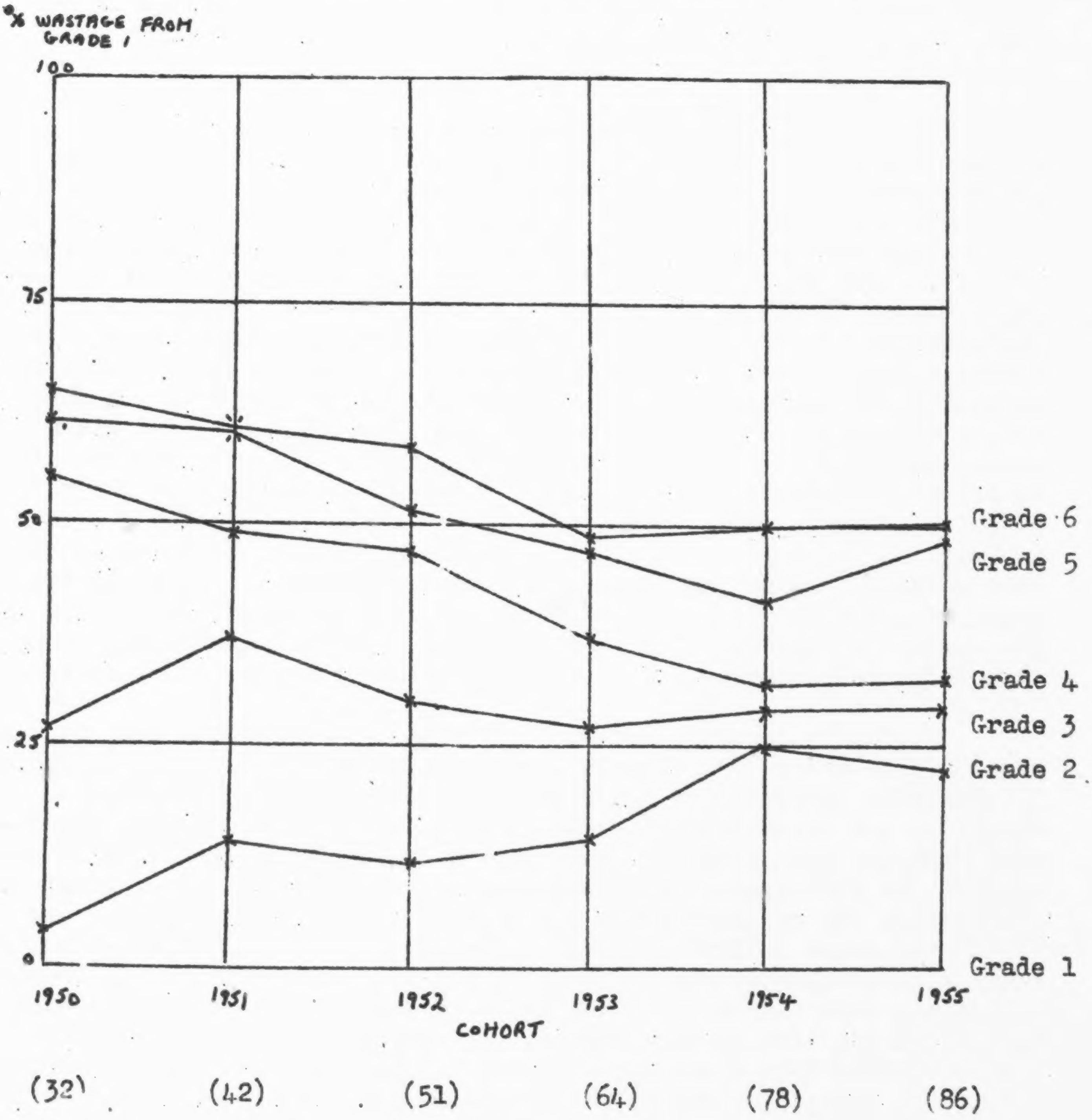
As will be seen the omission of repetition rates can lead to very considerable error. An example drawn from Venezuela is shown in Table 3. The data concerns the years 1955 to 1959 and gives promotion, desertion and repetition rates in percentages for each grade. (Enrolment data for each grade for this period can be found in Table 1.) For example, in 1955 grade 1 approximately 49% of the pupils were promoted to grade 2; 32% repeated grade 1 and 18% left the school system. By looking at grade 2 (1956), grade 3 (1957), and so on, we can see how a particular cohort behaves in terms of promotion, repetition and drop-out. We can see what happens to those children who repeat a grade and thus make their way into another cohort. For example the 32% who repeat grade 1 (1955) make their way to grade 1 (1956) where slightly different promotion, repetition and drop-out rates apply. The figures can be used to see how a group of children starting school in 1955 make their way through the school system. In fact Table 4 shows the history of 100 children starting in grade 1 in cohort 1955, and follows them through their school careers. The number of children promoted, repeating and

Figure 34

CAMBODIA

1950 - 1955 Cohorts

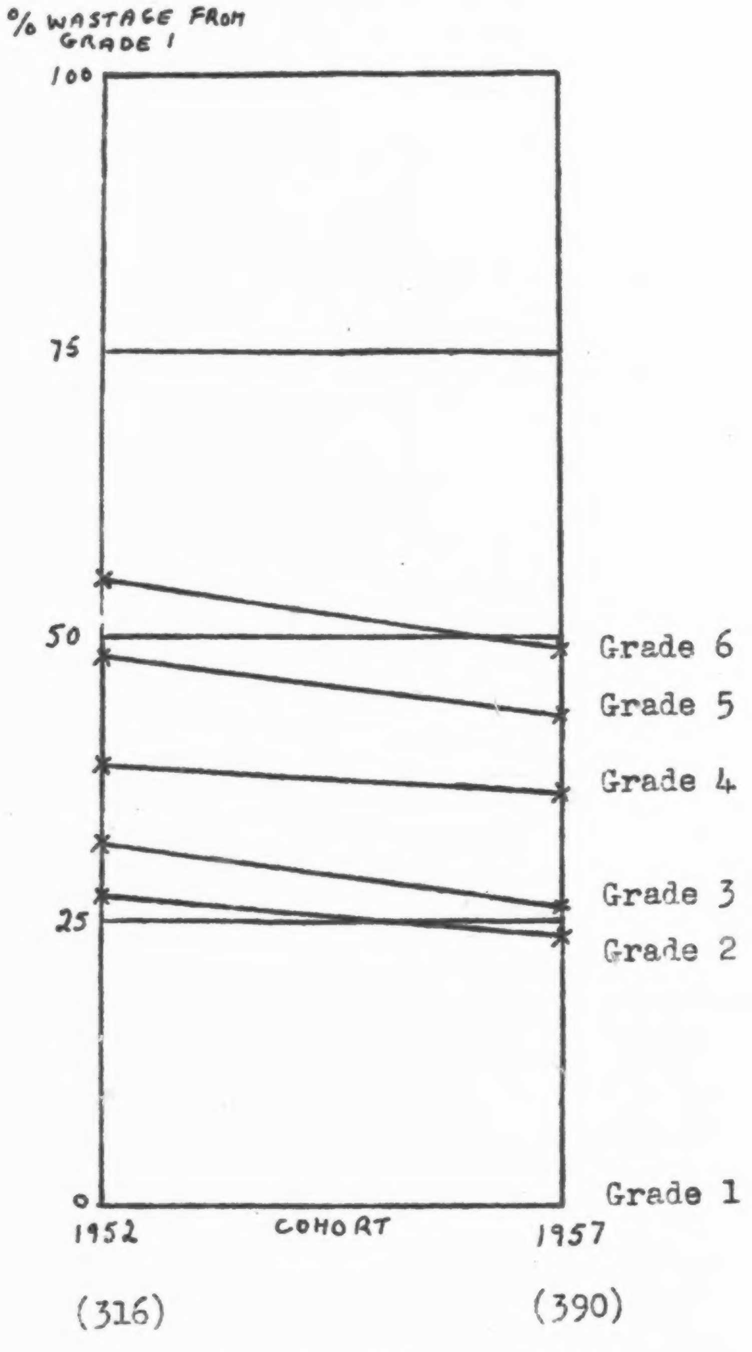
MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1



Number of thousand enrolments in grade 1.

Figure 35

CEYLON
1952 and 1957 Cohorts



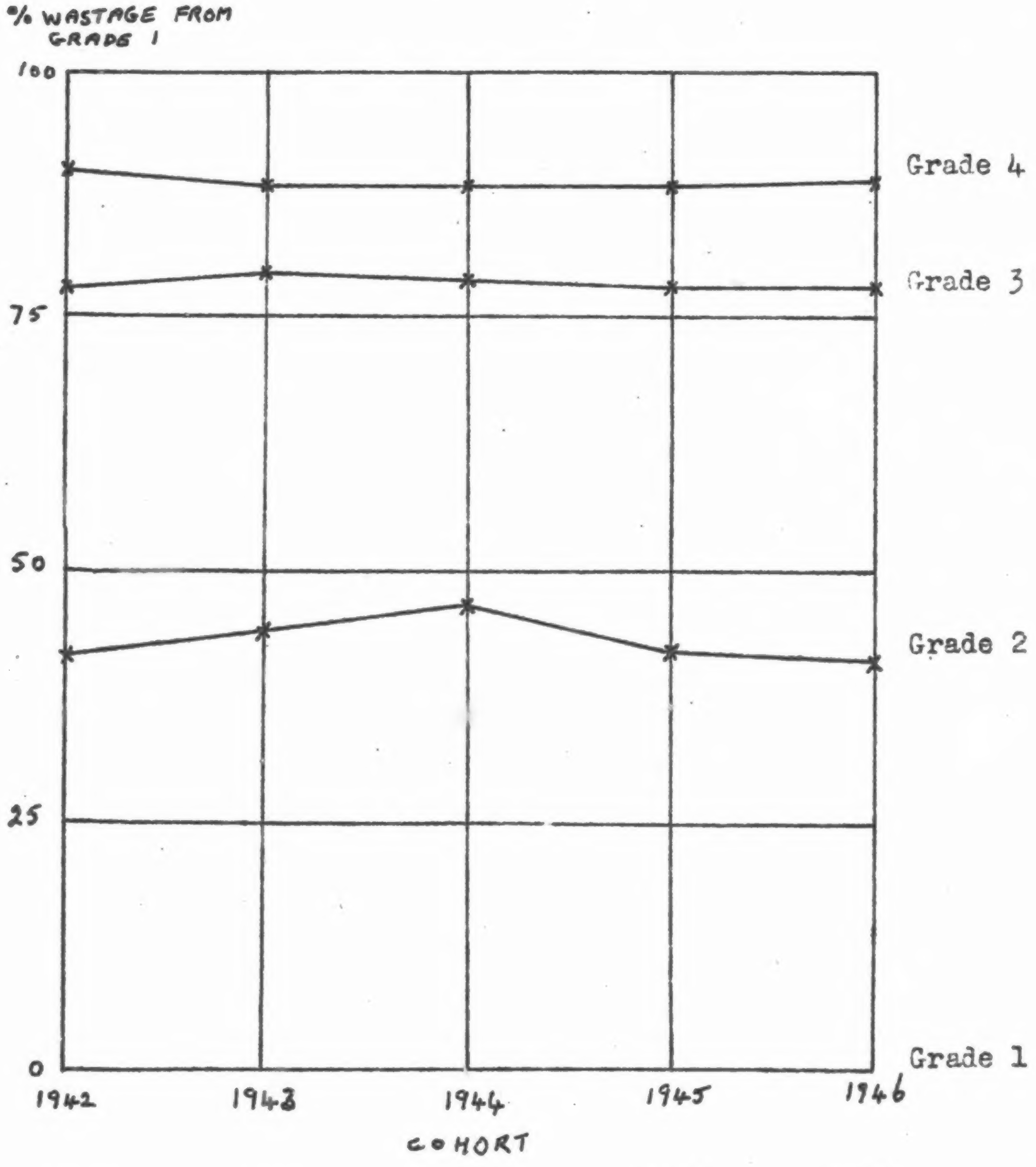
Number of thousand enrolments in grade 1.

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1

Figure 36

COLOMBIA

1942 - 1946 Cohorts



(343) (365) (375) (369) (382)

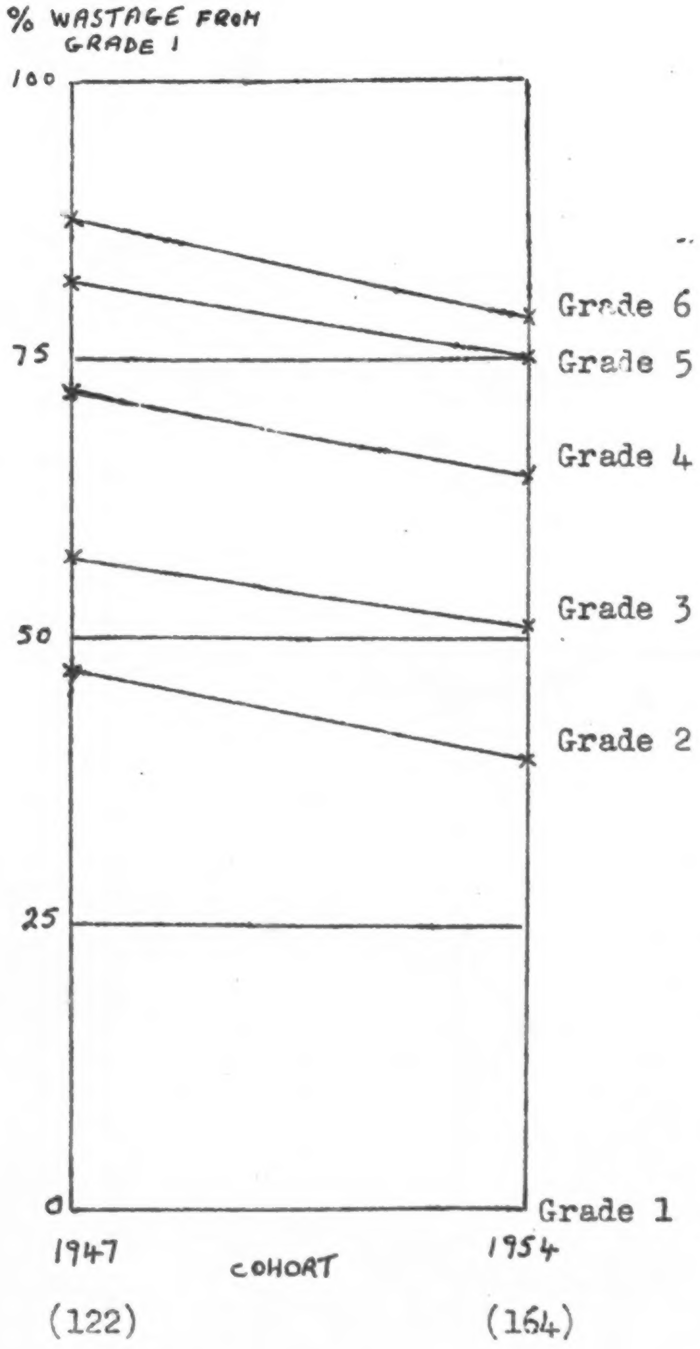
Number of thousand enrolments in grade 1.

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1

Figure 37

ECUADOR

1947 & 1953 Cohort



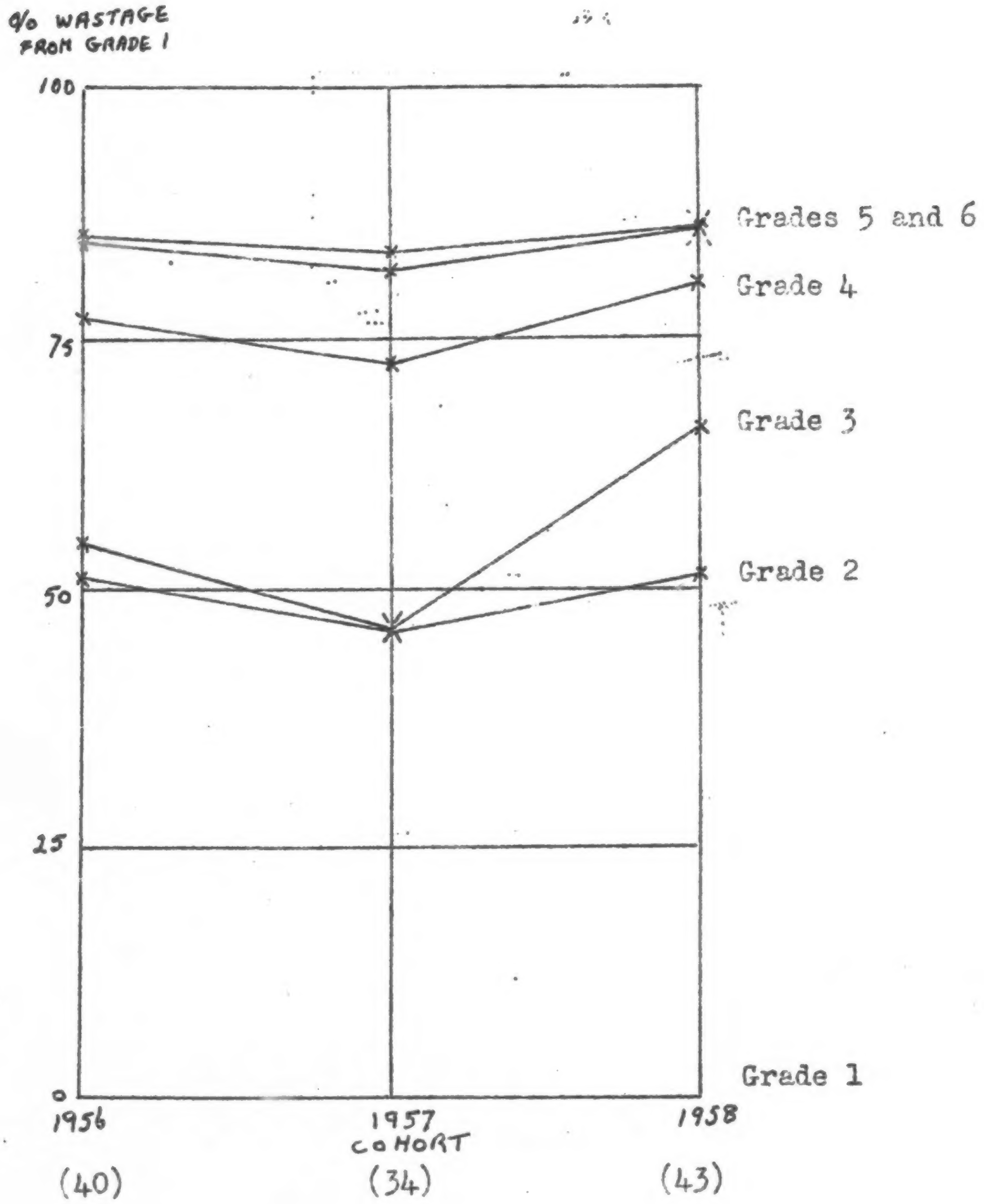
Number of thousand enrolments
in grade 1.

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1

Figure 38

LAOS

1956 - 1957 Cohorts



Number of thousand enrolments in grade 1.

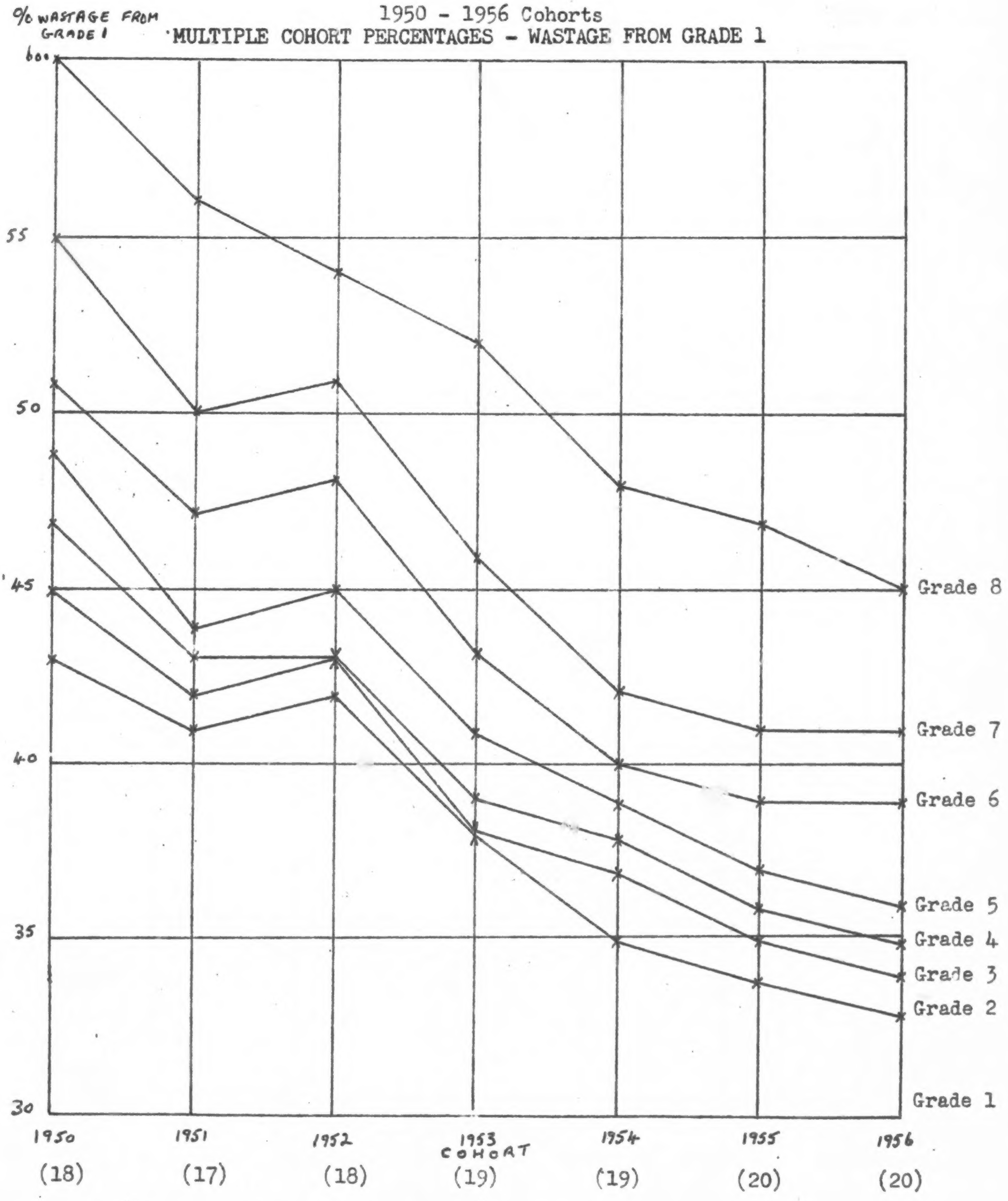
MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1

Figure 39

NEWFOUNDLAND

1950 - 1956 Cohorts

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1

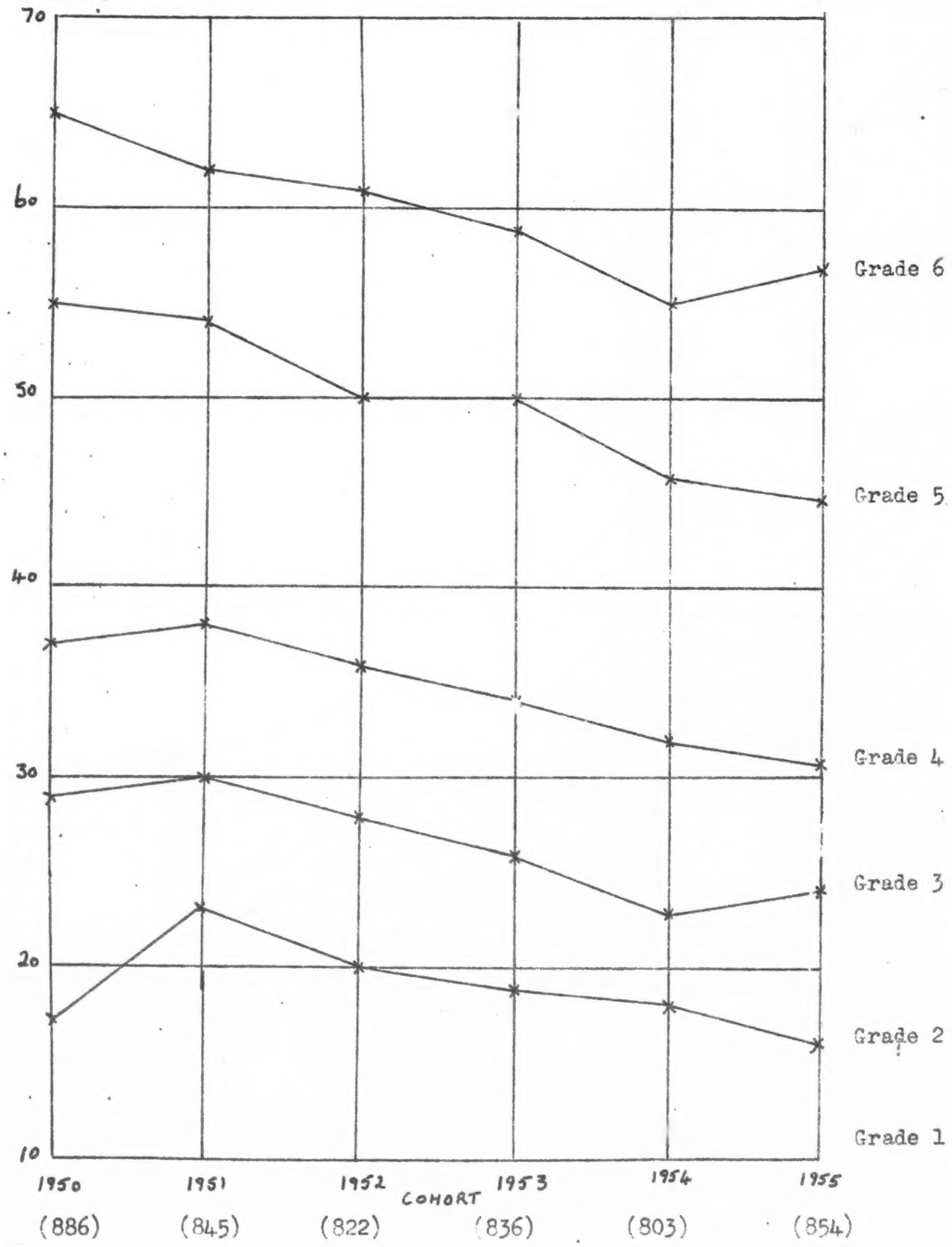


Number of thousand enrolments in grade 1.

Figure 40

PHILIPPINES

1950 - 1955 Cohorts



Number of thousand enrolments in grade 1.

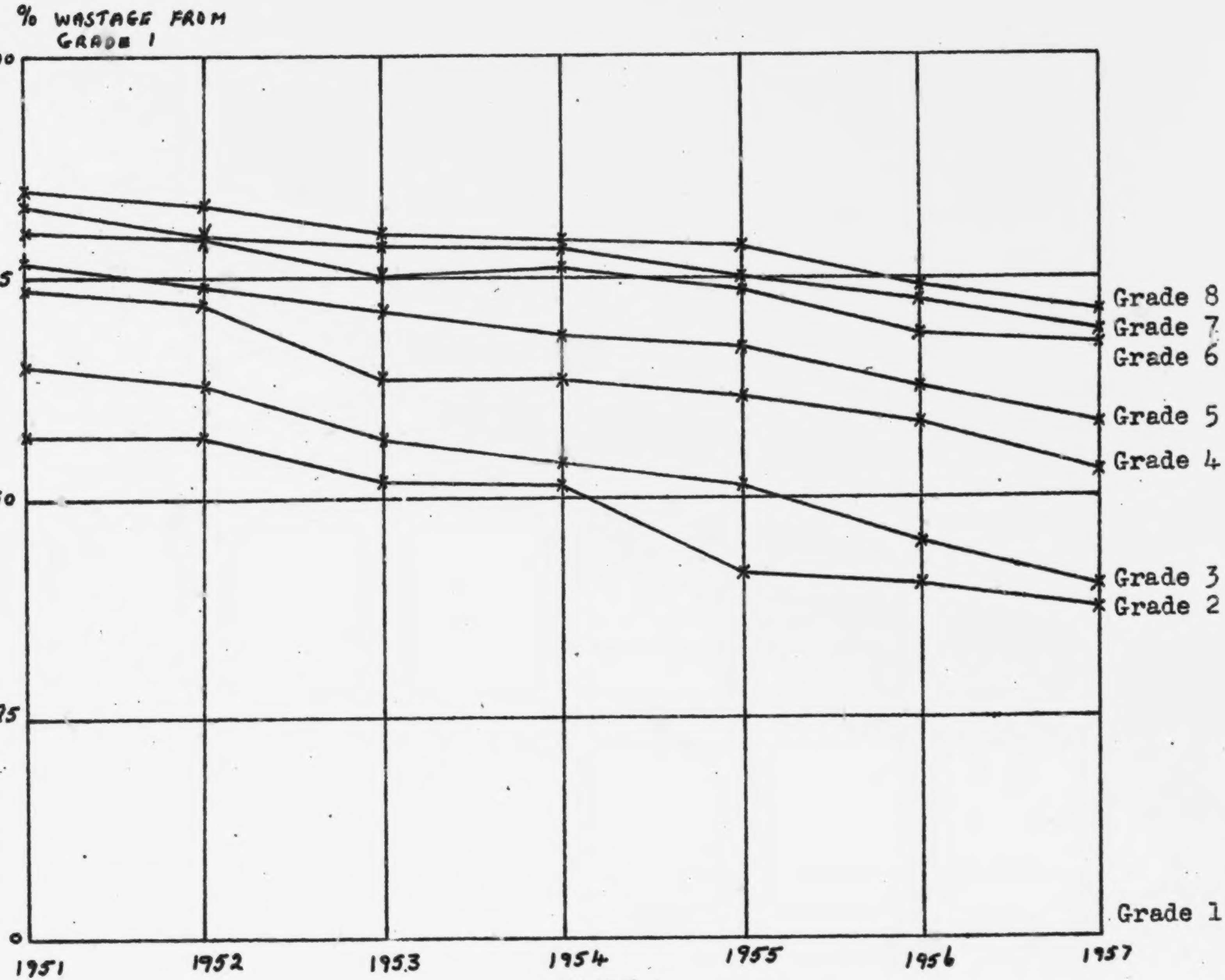
MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1

Figure 41

SWAZILAND

1951 - 1957 Cohorts

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1



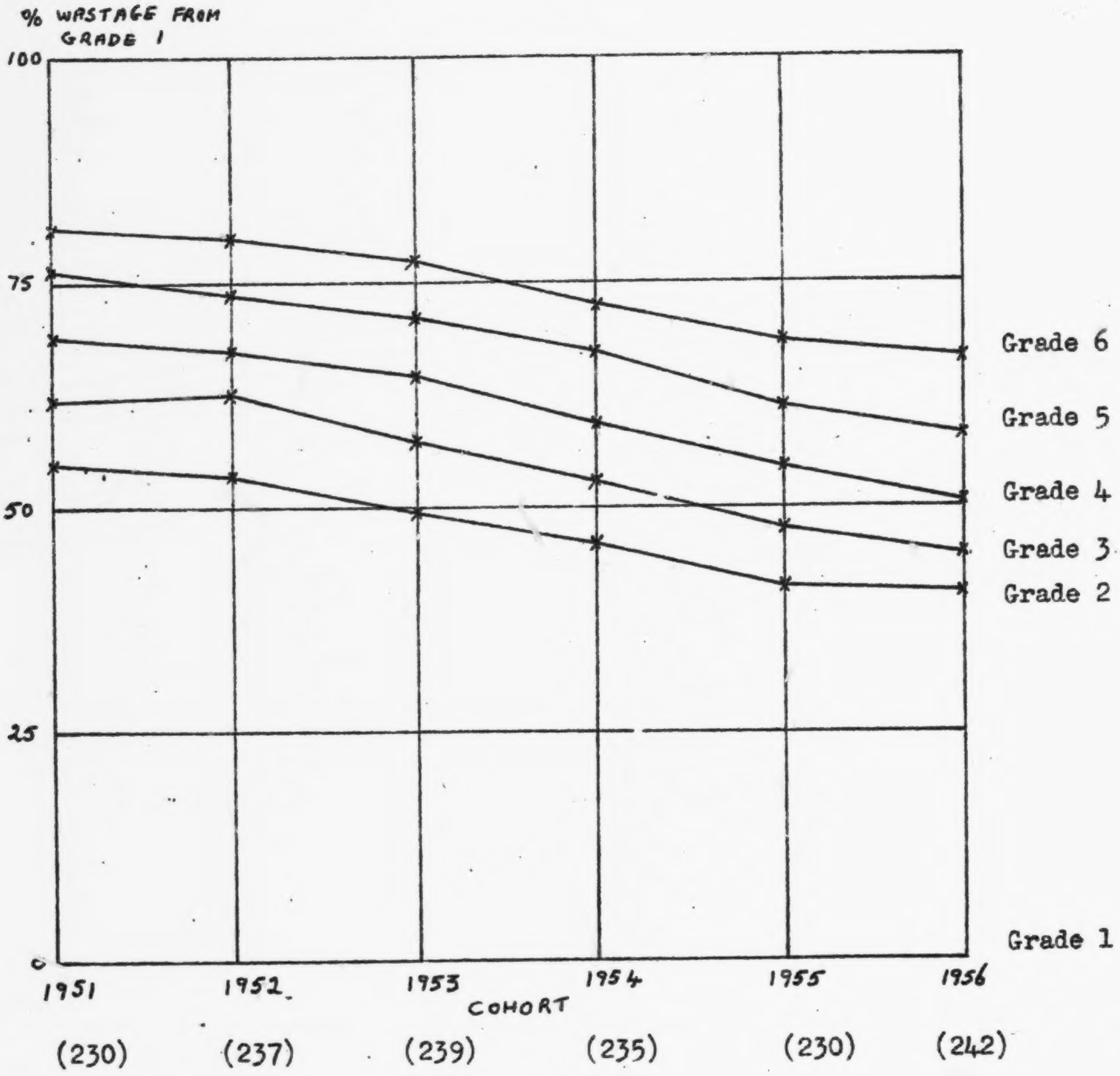
(6) (7) (6) (8) (9) (9) (9)

Number of thousand enrolments in grade 1.

Figure 42

VENEZUELA

1951 - 1956 Cohorts



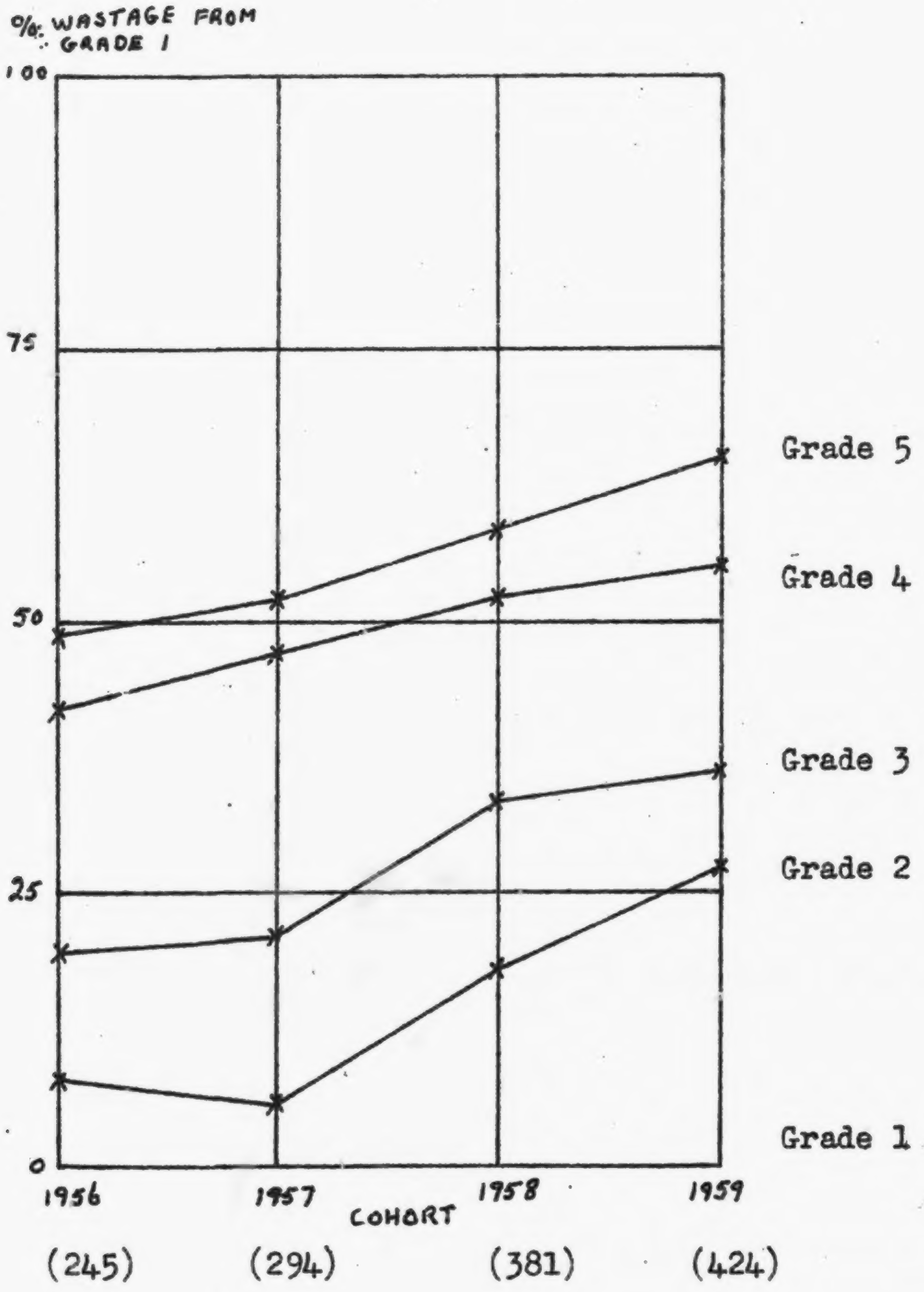
Number of thousand enrolments in grade 1.

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1

Figure 43

VIETNAM

1956 - 1958 Cohorts



Number of thousand enrolments in grade 1.

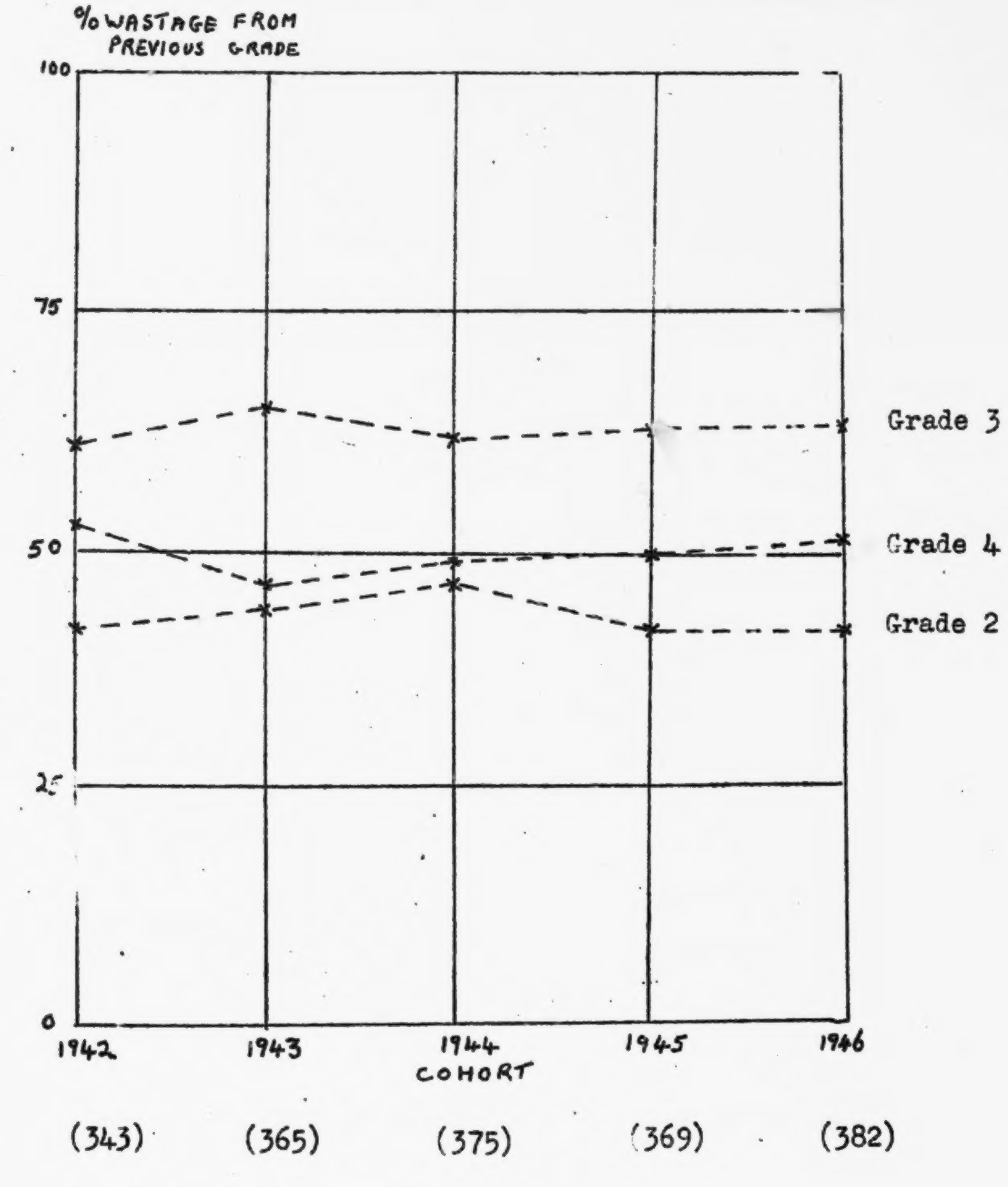
MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1

Figure 44

COLOMBIA

1942 - 1946 Cohorts

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM PREVIOUS GRADE

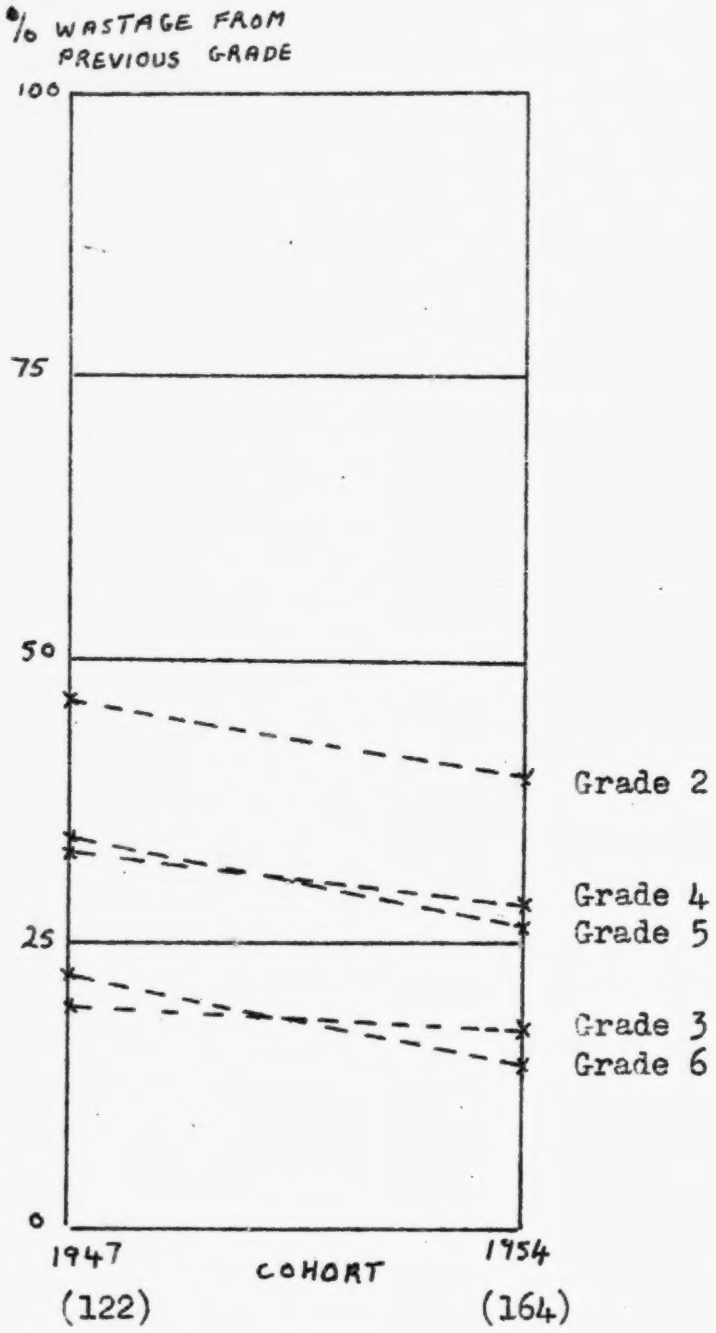


Number of thousand enrolments in grade 1.

Figure 45

ECUADOR

1947 and 1954 Cohorts



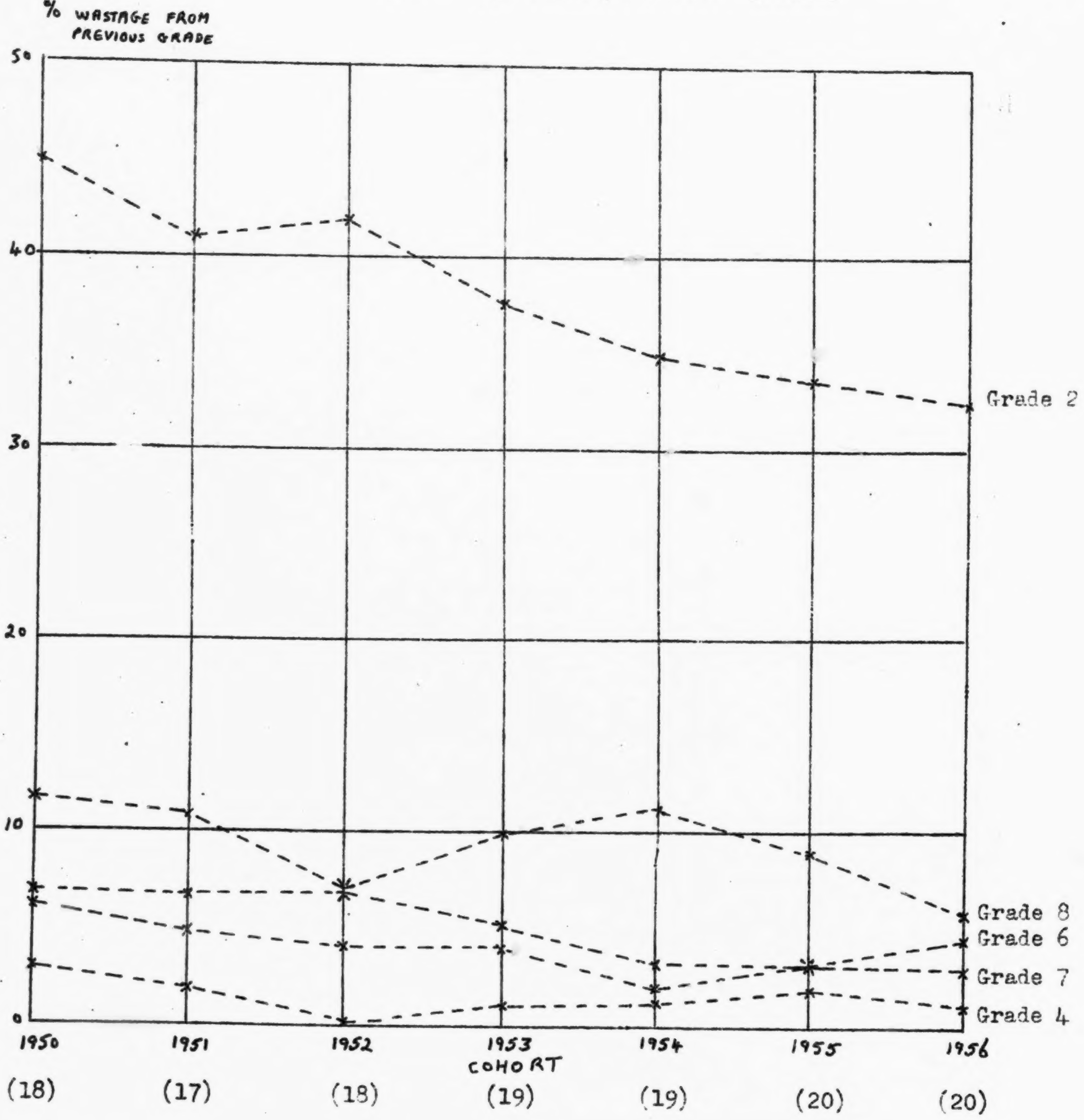
Number of thousand enrolments in grade 1.

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM PREVIOUS GRADE

Figure 46

NEWFOUNDLAND

1950 - 1956 Cohorts(selected grades)



Number of thousand enrolments in grade 1.

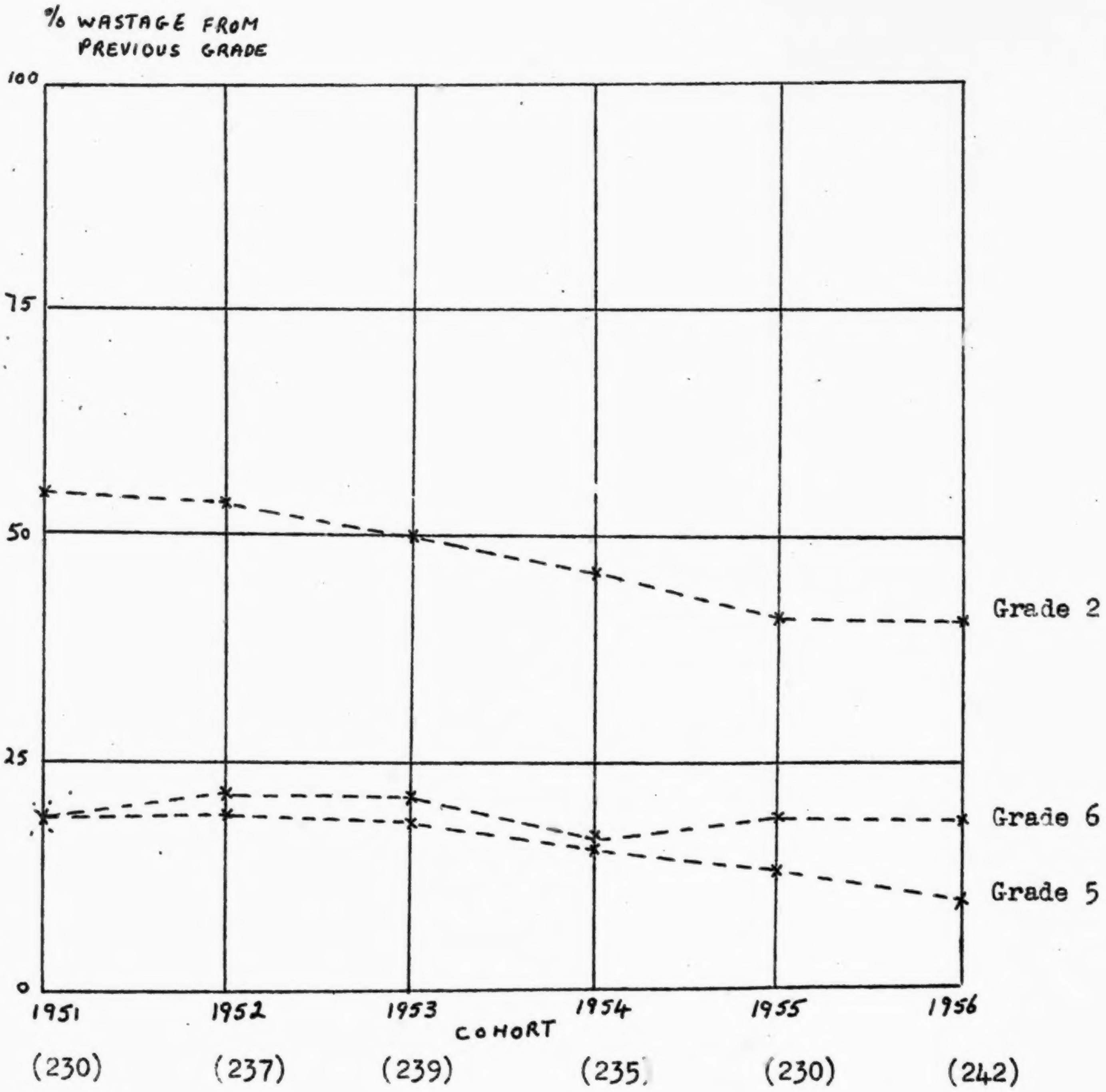
MULTIPLE COHORT PERCENTAGES - WASTAGE FROM PREVIOUS GRADE

Figure 47

VENEZUELA

1951 - 1956 Cohorts (selected grades)

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM PREVIOUS GRADE

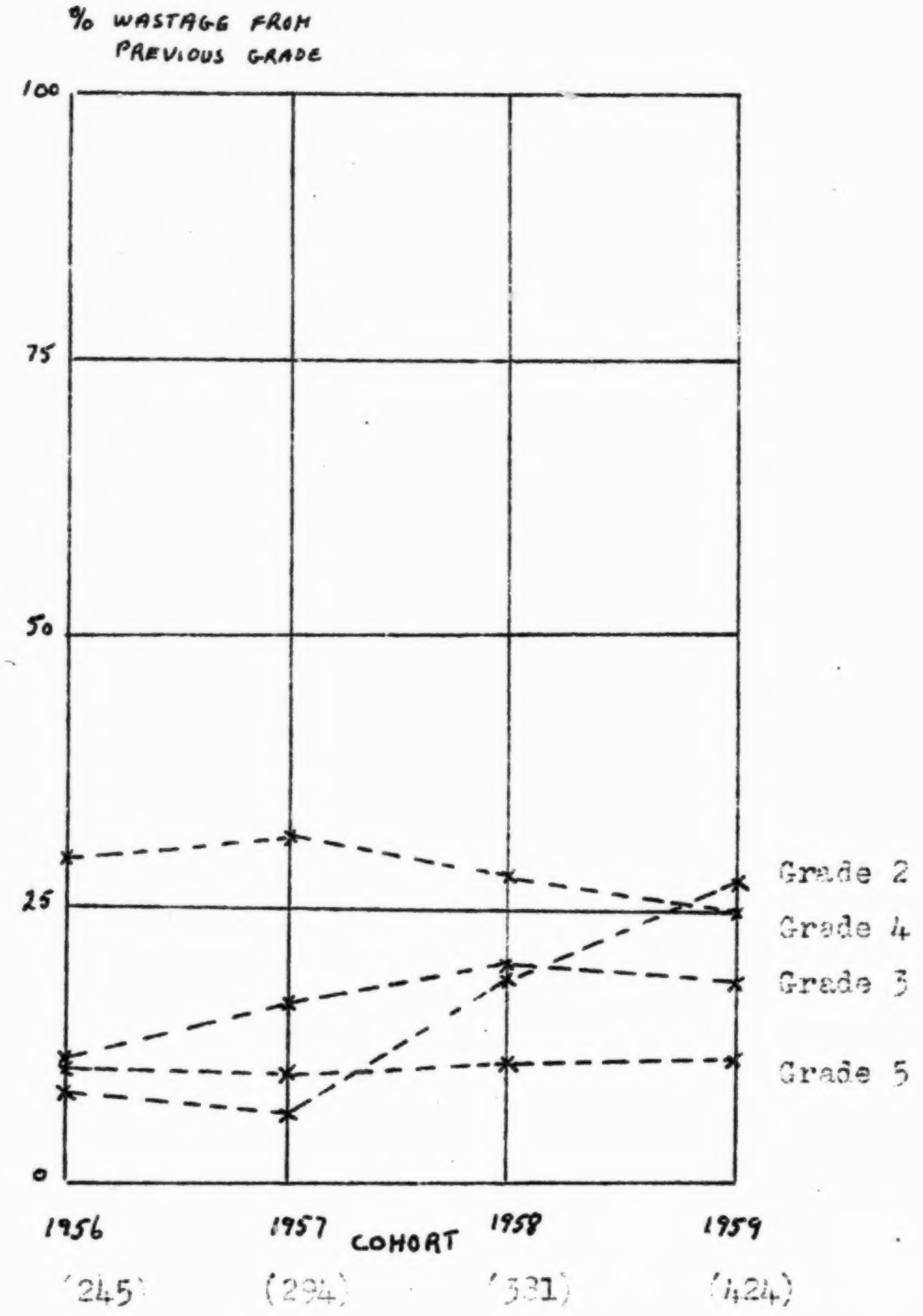


Number of thousand enrolments in grade 1.

Figure 48

VIETNAM

1956 -1959 Cohorts



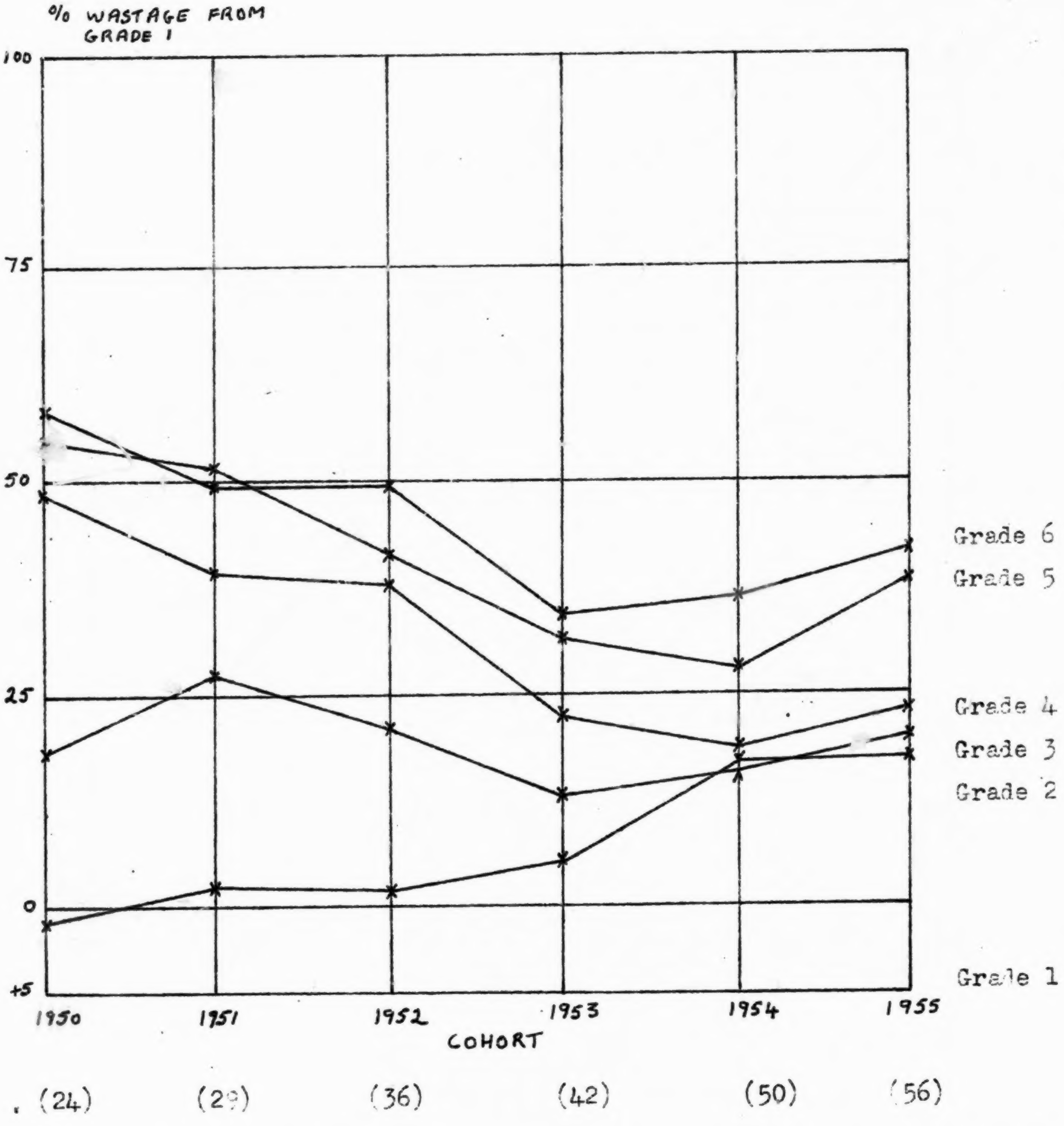
Number of thousand enrolments in grade 1.

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM PREVIOUS GRADE

Figure 49

CAMBODIA

1950 - 1955 Cohorts (Male)



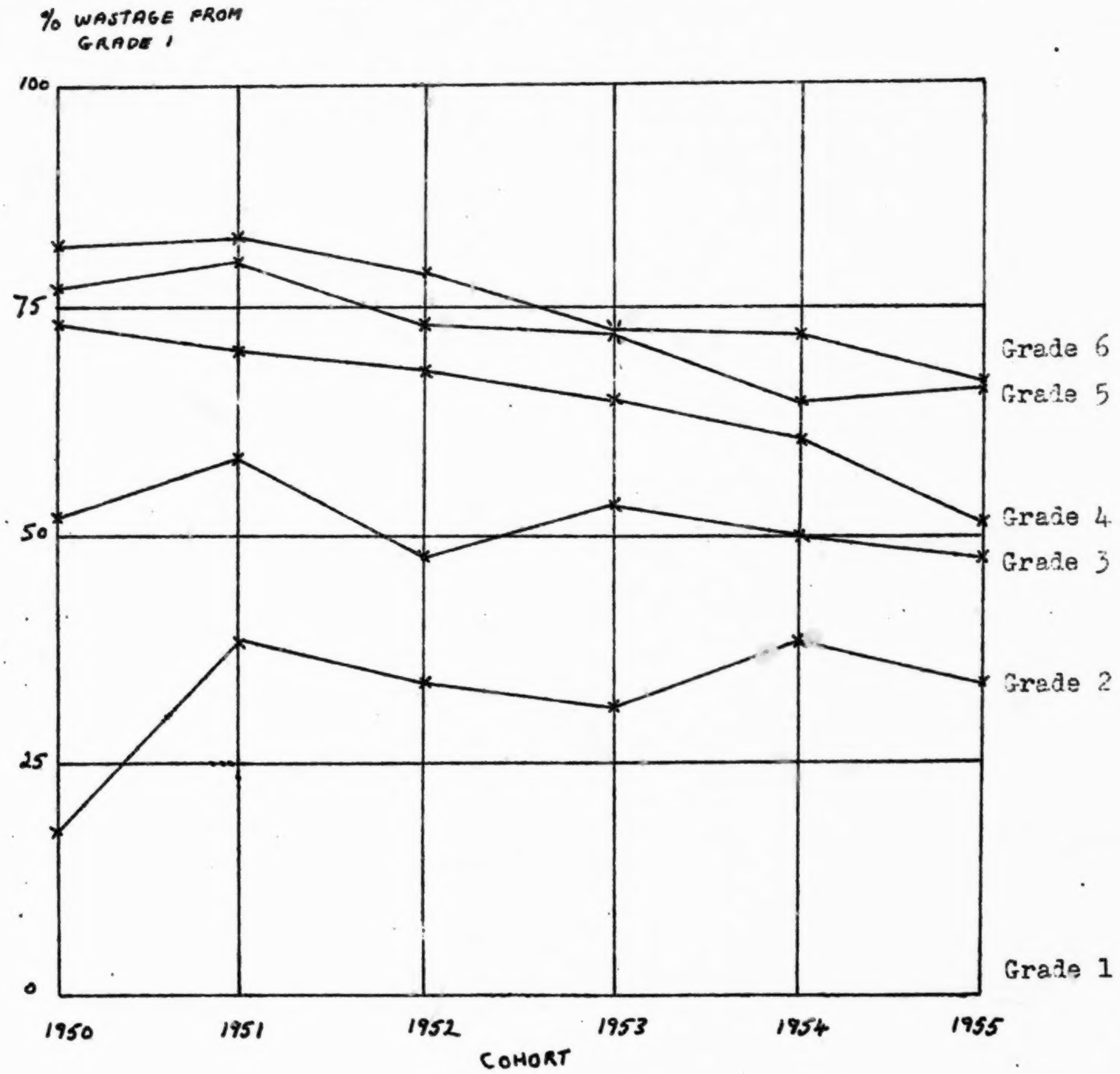
Number of thousand enrolments in grade 1.

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1
(Sub-divisions)

Figure 50

CAMBODIA

1950 - 1956 Cohorts (Female)



(9) (13) (15) (22) (28) (29)

Number of thousand enrolments in grade 1.

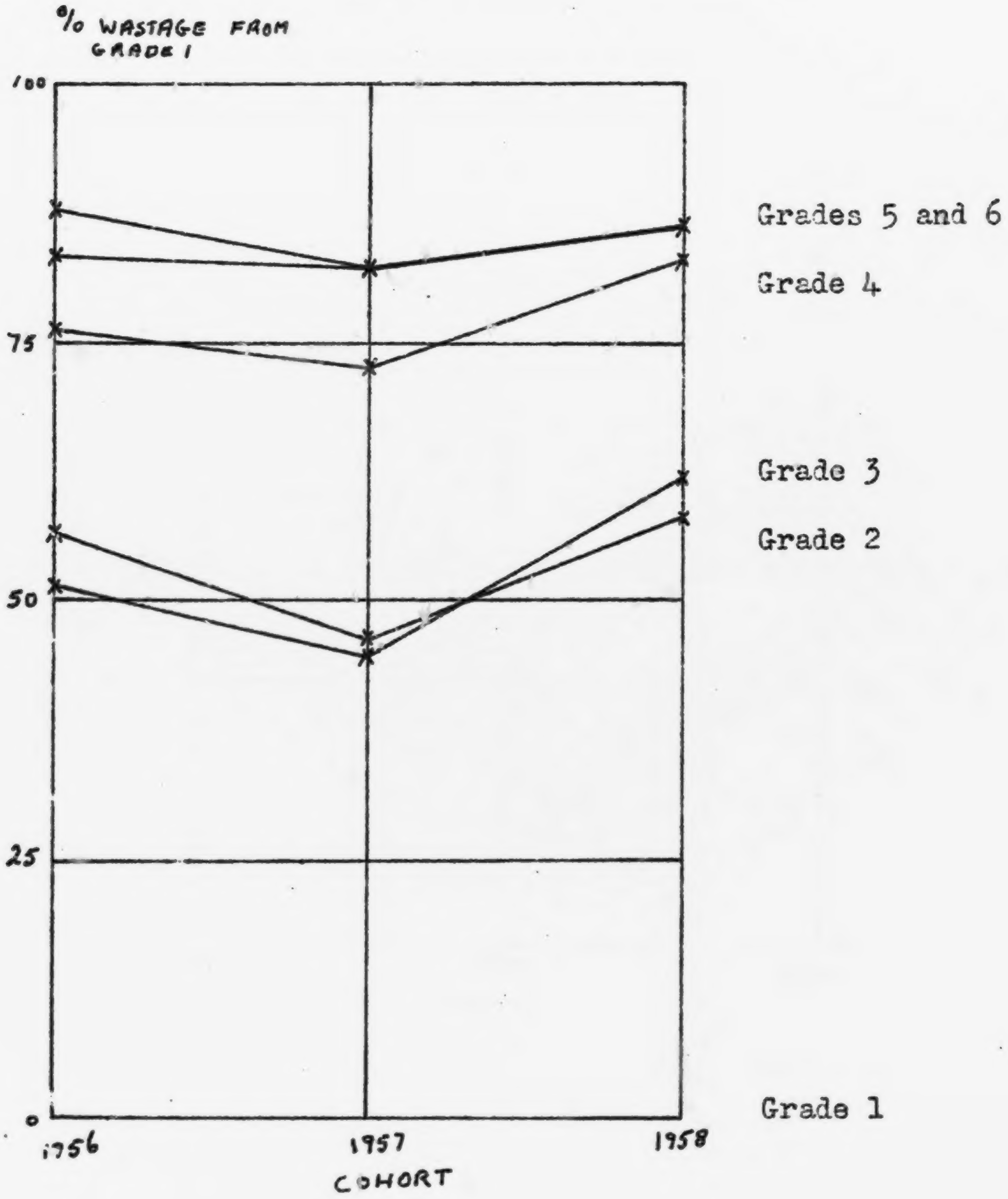
MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1
(Sub-divisions)

Figure 51

LAOS

1956 - 1958 Cohorts (Male)

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1
(Sub-divisions)



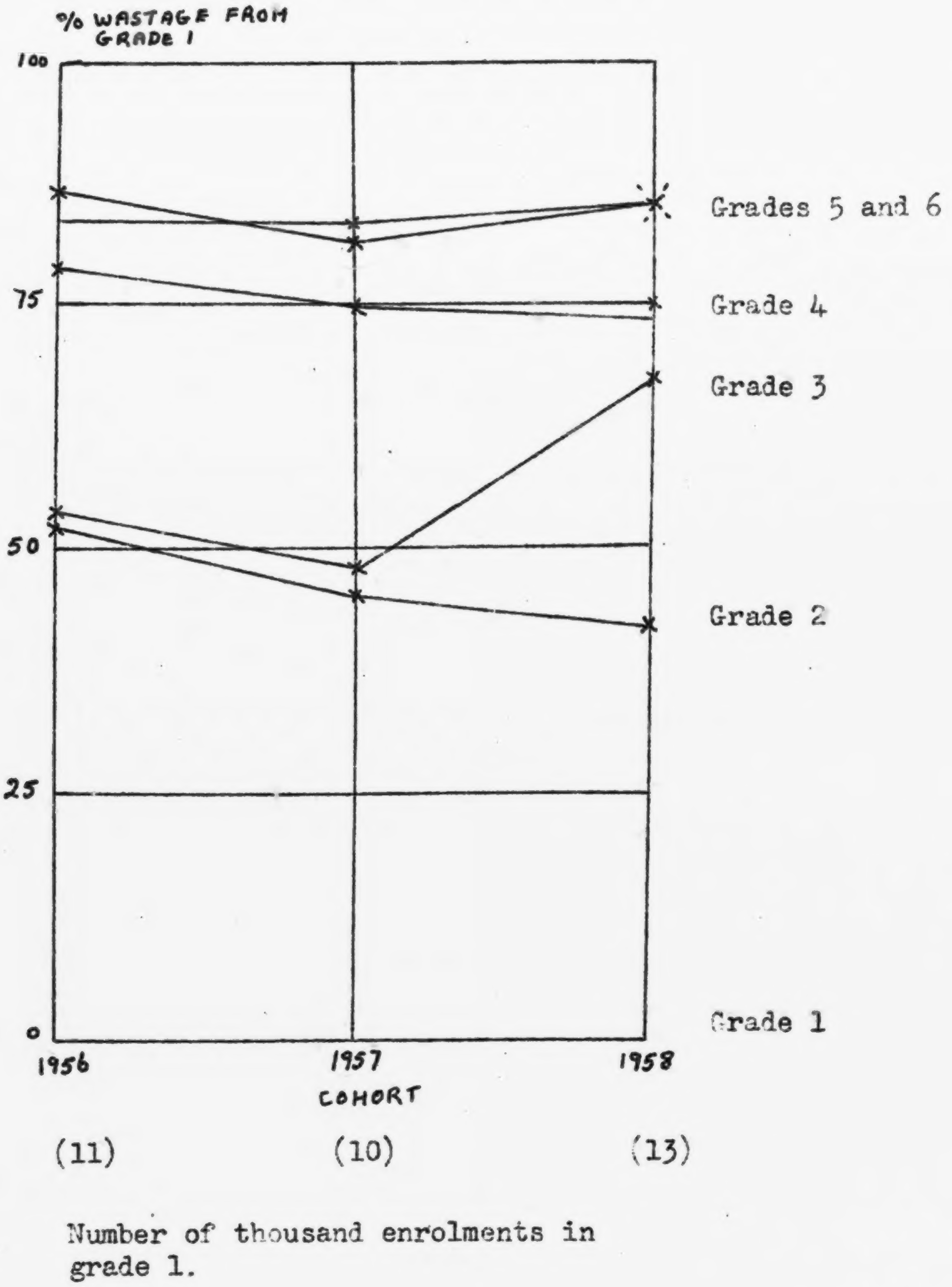
(29) (24) (43)

Number of thousand enrolments in grade 1.

Figure 52

LAOS

1956 - 1958 Cohorts (Female)



Number of thousand enrolments in grade 1.

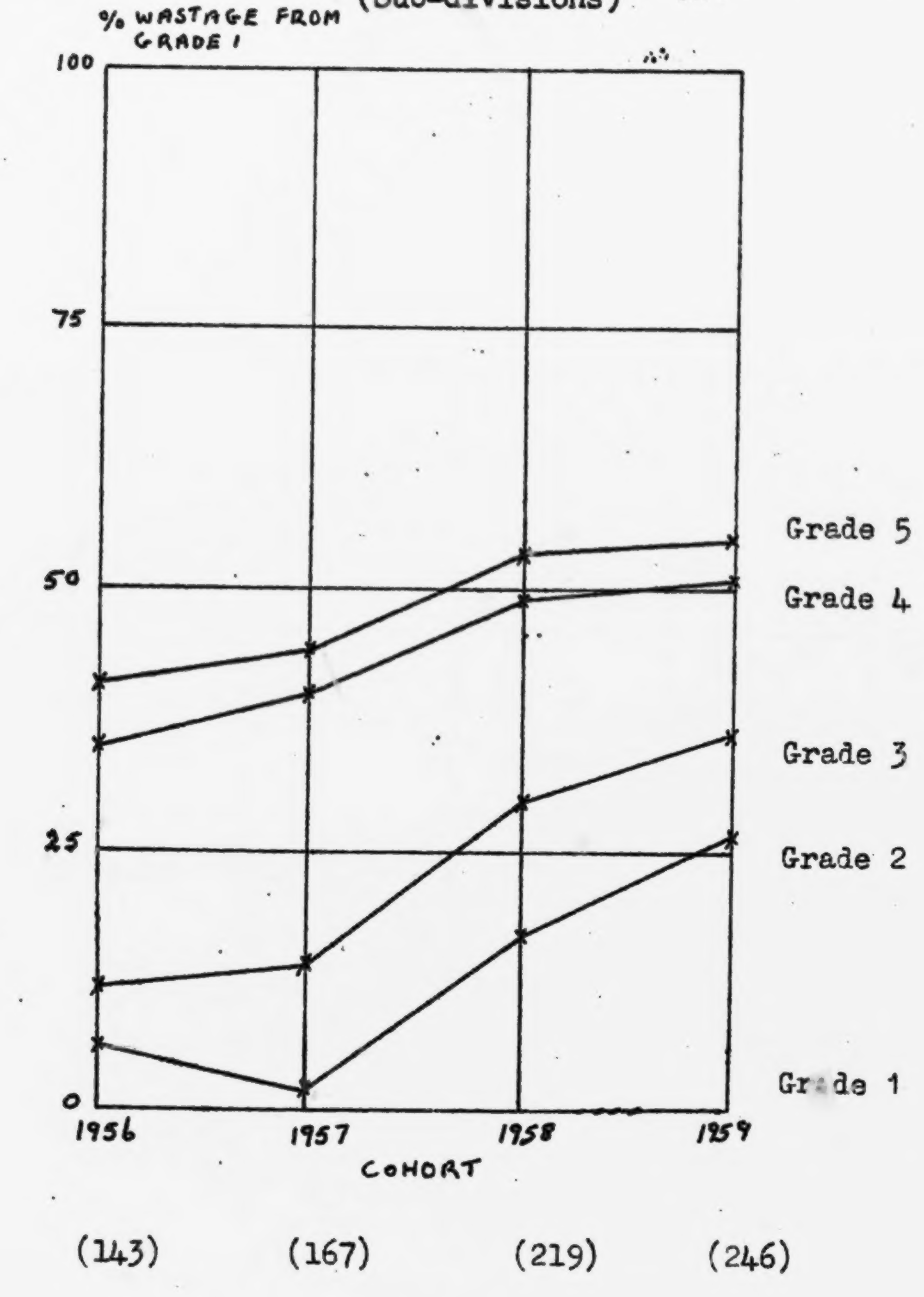
MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1
(Sub-divisions)

Figure 53

VIETNAM

1956 - 1959 Cohorts (Male)

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1 (Sub-divisions)



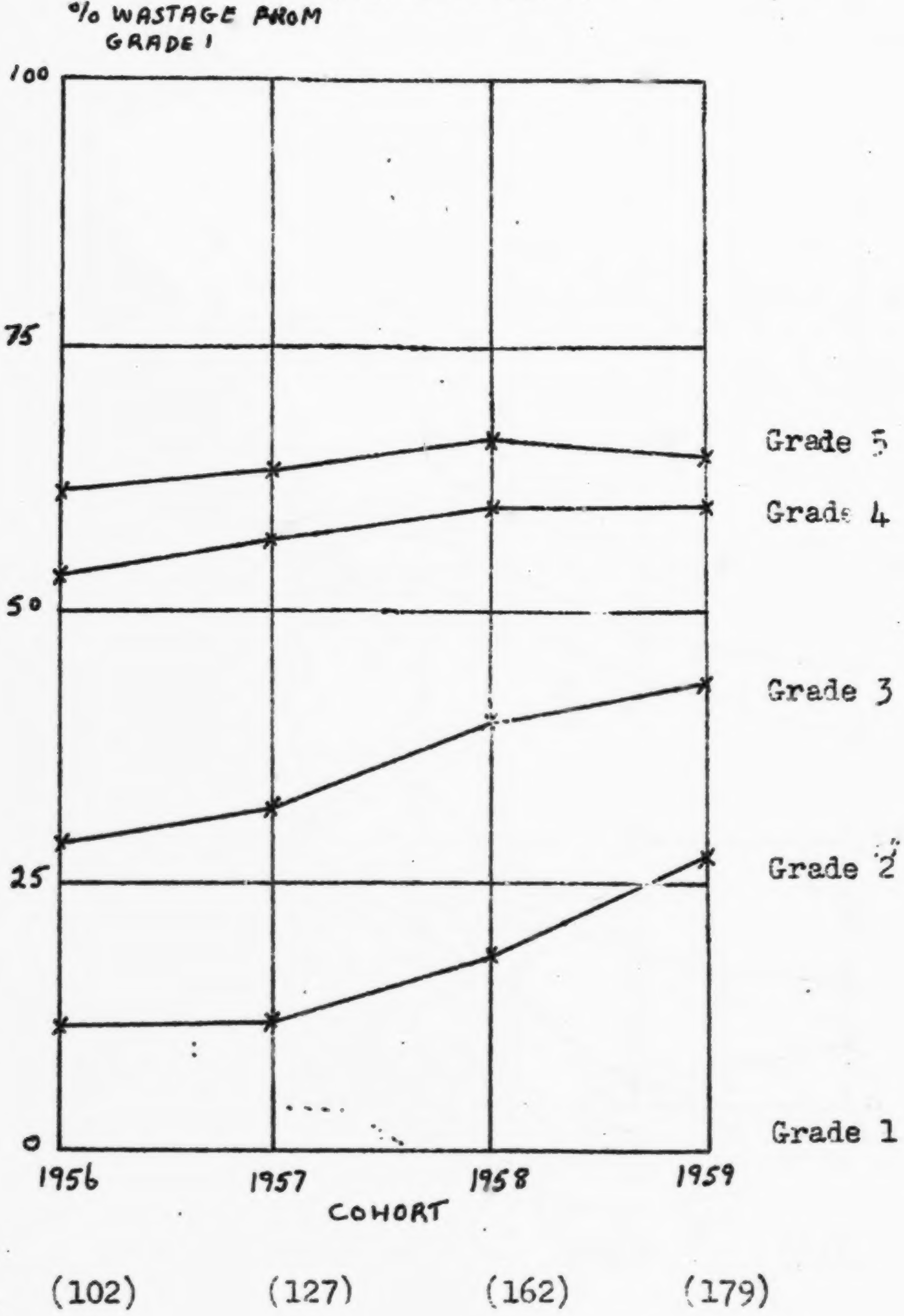
Number of thousand enrolments in grade 1.

Figure 54

VIETNAM

1956 - 1959 Cohorts (Female)

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1
(Sub-divisions)

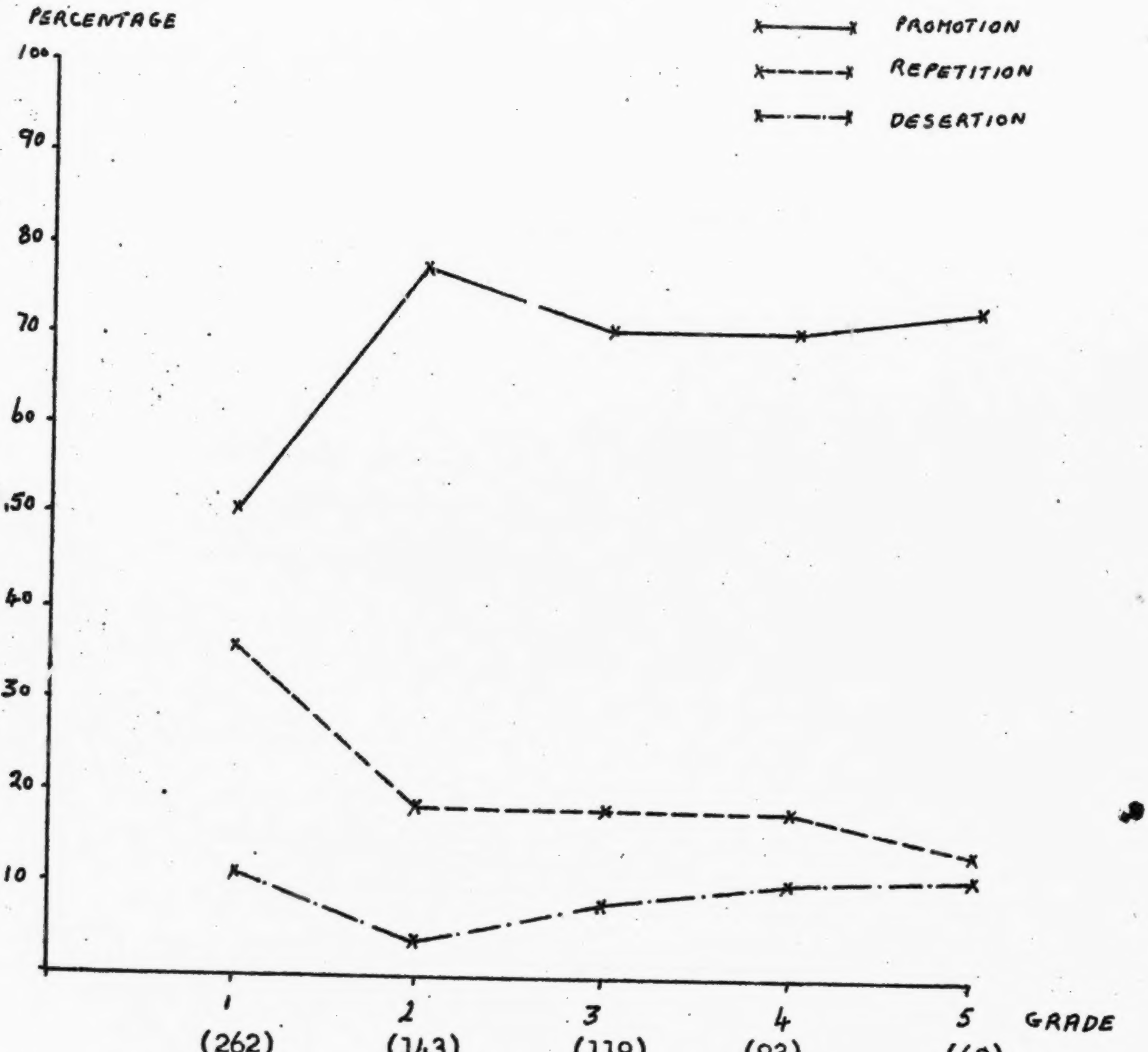


Number of thousand enrolments in grade 1.

Figure 55

VENEZUELA

Promotion, Repetition and Desertion Percentages for Each Grade in Government Schools 1957-58 to 1958-59



Number of thousand enrolments in grade 1.

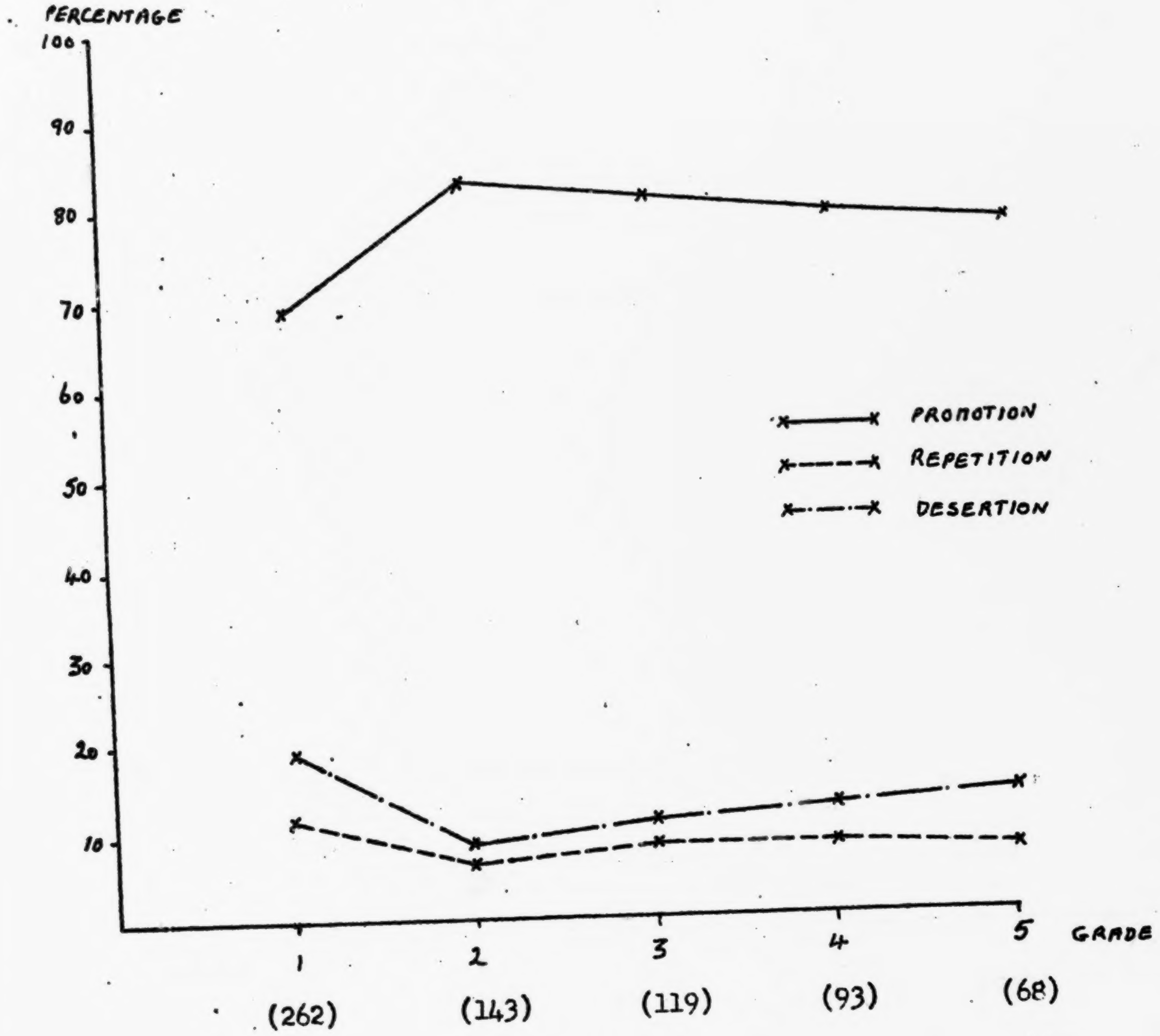
MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1
(Sub-divisions)

Figure 56

VENEZUELA

Promotion Repetition and Desertion Percentages for Each
Grade in Private Schools 1957-58 to 1958-59

MULTIPLE COHORT PERCENTAGES - WASTAGE FROM GRADE 1
(Sub-divisions)



Number of thousand enrolments in grade 1.

Table 1

VENEZUELA

Official (Government) and Private School Enrolments. Elementary Grades 1955-59.

Year	School	Grades of Study						Total
		1	2	3	4	5	6	
1955-56	Official	206,273	105,052	82,223	57,323	40,685	29,017	520,573
	Private	23,682	20,786	20,363	17,886	14,688	11,377	108,782
	Total	229,955	125,838	102,586	75,209	55,373	40,394	629,355
1956-57	Official	213,643	110,474	89,394	64,377	45,629	31,920	555,437
	Private	28,560	22,851	21,920	19,505	16,122	12,771	121,729
	Total	242,203	133,325	111,314	83,882	61,751	44,691	677,166
1957-58	Official	229,566	119,392	95,700	72,139	51,033	34,557	602,387
	Private	32,506	24,570	23,329	21,057	17,543	13,719	132,724
	Total	262,072	143,962	119,029	93,196	68,576	48,276	735,111
1958-59	Official	340,187	139,177	109,932	81,758	58,759	39,912	775,586
	Private	30,875	24,190	22,608	20,625	17,947	14,243	130,488
	Total	371,062	163,367	132,540	102,383	76,706	54,155	900,213
1959-60	Official	396,996	187,871	130,517	95,752	67,953	47,439	926,528
	Private	34,911	27,481	25,955	23,423	19,882	16,254	147,906
	Total	431,907	215,352	156,472	119,175	87,835	63,693	1074,434

Source: Education and Economy in Venezuela. Unesco Mission Report, no. 15, 1962.

Table 2

VENEZUELA

Promotion, Repetition and Desertion ('drop-out') Percentages in Elementary Grades for Official and Private Schools 1955-59

School	Year	Rate	GRADES 1	2	3	4	5	Total
Official (Govt.)	1955-56 to 1956-57	Prom.	44.76	71.95	66.78	70.33	73.83	59.65
		Repet.	34.63	17.27	16.79	16.52	13.07	24.04
		Desert.	20.60	10.78	16.43	13.15	13.11	16.32
	1956-57 to 1957-58	Prom.	45.53	70.09	64.49	65.35	67.27	60.19
		Repet.	33.50	20.02	20.43	22.50	19.63	25.86
		Desert.	20.97	9.89	15.07	12.15	13.10	13.94
	1957-58 to 1958-59	Prom.	51.24	77.29	71.66	71.51	74.00	64.78
		Repet.	36.10	18.04	18.44	18.26	14.06	25.08
		Desert.	12.66	4.67	9.89	10.23	11.93	10.14
Private	1955-56 to 1956-57	Prom.	88.72	95.38	86.68	83.33	83.62	87.95
		Repet.	13.36	8.86	10.29	10.37	8.29	10.44
		Desert.	-2.08	4.23	3.03	6.31	8.09	1.60
	1956-57 to 1957-58	Prom.	78.13	90.21	83.62	79.85	79.48	82.28
		Repet.	12.74	9.87	12.38	13.98	12.24	12.21
		Desert.	19.13	-0.08	4.00	6.17	8.28	5.51
	1957-58 to 1958-59	Prom.	69.18	83.67	80.65	79.15	78.63	77.58
		Repet.	11.14	6.93	8.79	8.6[illegible]	7.29	3.79
		Desert.	19.68	9.40	10.57	12.[illegible]	14.08	13.63

Source: Education and Economy in Venezuela. Unesco Mission Report, no. 15, 1962.

Table 3

VENEZUELA

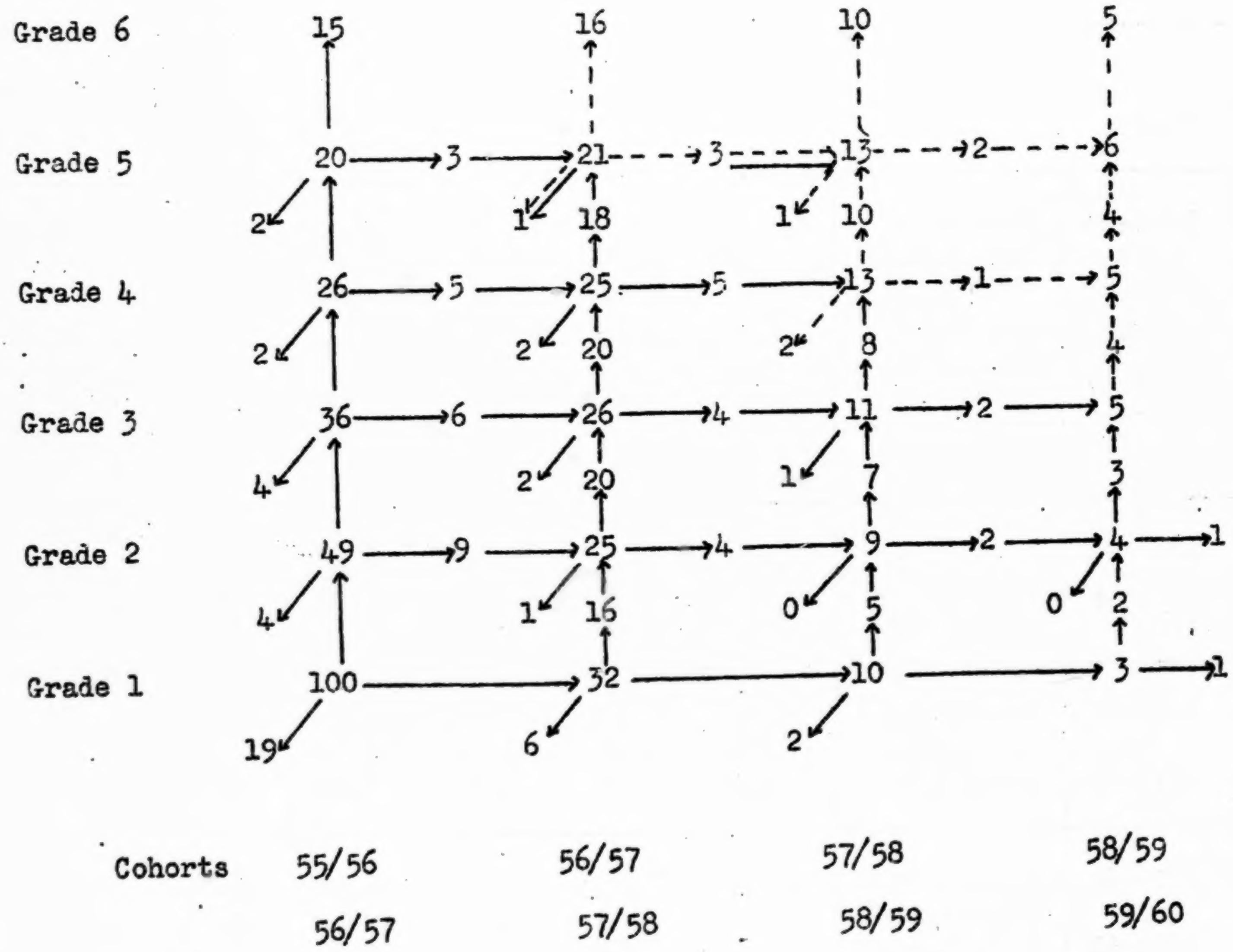
Promotion, Repetition and Desertion Percentages in Elementary Grades 1955-61.

Year	Group	GRADES					Total 1 - 5
		1	2	3	4	5	
1955-56 to 1956-57	Promotion	49.30	75.82	70.73	73.42	76.42	64.33
	Repetition	32.33	15.86	15.50	15.06	11.80	21.79
	Desertion	18.26	8.31	13.77	11.53	11.78	13.88
1956-57 to 1957-58	Promotion	49.38	73.54	68.26	68.72	70.45	64.42
	Repetition	31.05	18.28	18.85	20.52	17.70	23.50
	Desertion	19.57	8.18	12.89	10.76	11.84	14.07
1957-58 to 1958-59	Promotion	53.47	78.38	73.42	73.23	75.19	67.00
	Repetition	33.00	16.14	16.55	16.08	12.33	22.26
	Desertion	13.53	5.48	10.02	10.69	12.48	10.75
1958-59 to 1959-60	Promotion	50.90	81.58	75.68	75.10	78.18	66.11
	Repetition	31.51	16.21	17.49	18.44	14.27	23.22
	Desertion	17.59	2.21	6.82	6.47	7.55	10.68
1959-60 to 1960-61	Promotion	52.54	77.32	73.72	72.90	75.96	65.53
	Repetition	31.92	15.11	16.85	17.59	14.14	22.77
	Desertion	15.54	7.58	9.43	9.51	9.90	11.70

Source: Education and Economy in Venezuela. Unesco Mission Report, no.15, 1962.

Table 4

Grade History of 100 Children Entering Grade 1 in 1955 Applying Promotion, Repetition and Desertion Rates Found in Table 3


Grade 6
15
16
10
5
Grade 5
20
3
21
3
13
2
6
2
1
18
1
10
4
Grade 4
26
5
25
5
13
1
5
2
2
20
2
8
4
Grade 3
36
6
26
4
11
2
5
4
2
20
1
7
3
Grade 2
49
9
25
4
9
2
4
1
4
1
16
0
5
0
2
Grade 1
100
32
10
3
1
19
6
2
Cohorts
55/56
56/57
57/58
58/59
56/57
57/58
58/59
59/60

------- using nearest cohort as actual cohort missing.

dropping-out are given. Table 4 shows that of 100 children starting in grade 1 in 1955 only 15 make their way to grade 6 and remain within the same cohort. 32 of these 100 children immediately make their way, by means of repetition, to cohort 1957-58. It can be seen from this table that at each grade a number of children make their way from one cohort to another. For example, at grade 3, 6 children move from cohort 1956-57 to cohort 1958-59, and, continuing across the table horizontally, 2 children make their way from cohort 1958-59 to cohort 1959-60. All these children started in grade 1 in cohort 1956-57. The figures presented in the table depend not only on promotion, repetition and drop-out percentages for one cohort, but because of repetition, are based on the four different cohorts shown. For example, when a child makes his way from one cohort to another the promotion rates applied to him and other of his group are the promotion, desertion and drop-out percentages which apply to the cohort he has moved into. Thus, we are taking into account changes which may occur from one cohort to another. Nevertheless there are limitations to the use of such data, since we are only applying average percentages, and this may lead to a certain degree of error, (See page 76). We have, for example, already noted the differences between official and private school promotion, repetition and desertion rates (Figures 55 and 56).

The Financial Cost of Wastage

A table such as the one presented above enables us to make a number of statements about wastage. Firstly, we can calculate the cost of education in terms of the number of child years involved. For example, using the data provided above, it will take 231 child years to get 15 children from grades 1 to 6 in the minimum period of 5 years. If there is no wastage in terms of repetition or drop-out 15 children could arrive in grade 6 after 75 child years. That is, the amount of drop-out which occurs is so great that the cost of education is raised by about three times the basic amount. Basic amount refers to the cost of getting children from grades 1 to 6 in the shortest number of years. To put this another way, if there was no wastage, 46 children instead of 15 would be able to make their way from grades 1 to 6 in the shortest possible time for the same amount of money. Returning to the table it appears possible to get 31 children to grade 6 in 5 years, and the cost of this due to drop-out and children repeating on one occasion is 2.3 times the basic amount. 41 children get to grade 6 after 7 years and this includes children who repeat a grade twice or repeat two grades once. The cost is twice the basic amount. 46 children reach grade 6 after 8 years and the cost of this is just under twice the basic amount. Any further repetition does not reduce the cost significantly. Thus, repeated repetition of the kind illustrated here causes costs to be doubled. Artifically reducing repetition by excluding children after they have repeated on one occasion does not solve the problem, since this will involve proportionally greater cost. This may suggest that it is important to tackle the problems of drop-out and repetition at source before considering an artificial curtailing of repetition rates. The figures obtained from Venezuela approximate the situation where about 46 children out of every 100 will eventually make their way to grade 6. Thus, wastage includes, 1) 54% of the original group who do not arrive in grade 6; 2) doubling of costs due to repetition and drop out. It is also important to note that only 58% actually reach grade 4. It is likely therefore that the rest, although receiving some education, are unable to consolidate their initial learning and probably relapse into illiteracy. Since registrations nearly doubled for grade 1 over the period 1955-59 (rising from 229,995 to 431,907 in 1959), and since there is no comparable change in wastage rates (i.e. the percentage drop-out and repetition remain very similar) it can be seen that the amount of money actually wasted in education has increased by an extremely large amount. For example, using the wastage percentage given above it is estimated that of 229,995 children commencing a course only 105,797 will finish. The outlay in finance per child completing the elementary school cycle will be approximately twice the basic amount. When 431,907 children start a course only 198,677 can be expected to finish, which results in a great increase in expenditure for little return.

It is likely that the figures on wastage given above are in error to some degree. At least one factor suggests that the figures are underestimates and less children complete than would be expected from Tables 3 and 4. For example, first time repeaters may have a subsequent promotion rate which is inferior to the promotion rate of those who continue steadily through the same cohort. Furthermore, the more often a person repeats the more likely he is to drop-out. If this is the case then the use of percent promotion rates given in the different cohorts will not be accurate enough for repeaters, though from the data available it is not possible to calculate the degree of error. Further sources of error are caused by the fact that, a) children may be transferred from one school to another, or, b) children may be re-admitted to a school. In both cases the children may be registered as new admissions, although they may be repeaters. It should also be noted that young children may have different repetition rates from older children. A reflection of this is seen in Table 5. The repetition rate for children who are 12 and under is greater than for those children who are over 13. Desertion rates, on the other hand, are very much greater amongst children of 13 and over. These may well be stable statistics, since cohorts 1959-60 and 1960-61 show very similar figures.

If one now returns to Table 3 it can be seen that the interpretation of the cohort percentages examined earlier must be modified considerably. In grade 1, although 19% drop-out, 32% continue their studies by repeating. In other words, it seems possible that the major problem in wastage in the first grade is not one of loss of pupils, but merely the fact that they are extremely likely to repeat at he first grade level. This may be a much more expensive form of wastage than immediate drop-out, since such children are unlikely to complete the course (see page 99) and may be unlikely to become literate. Nevertheless, they absorb places and money and thus prevent other children entering the school system. This, of course, matches the statistics given in Table 5 showing the large amount of repetition amongst young children.

Wastage and Prediction *

When there is a considerable amount of year/grade data available for a particular country it becomes possible in certain cases to predict enrolment, drop-out, repetition and other figures for the years to come. The possibility of doing this is limited by several factors. Firstly, the greater the number of years for which data are available the more reliable and accurate will be the prediction. For example, where there are only three or four plotting points prediction is likely to be poor. Secondly, if prediction is to be accurate the data must be reasonably linear. The greater the deviation from linearity the greater the amount of error. For example, if we have only five or six plotting points and they lie in a straight line it is likely that we can estimate fairly accurately the amount of enrolment, drop-out etc. for several years ahead. On the other hand, if there is some variation in the linearity of the figures much more data would be required for accurate prediction. Thirdly, it should not be forgotten that any change which may occur in the country which could effectively reduce or increase the number of pupils may change the trend and therefore result in prediction error. Thus, when making estimates for the future it is unlikely that we shall be able to predict accurately for many years ahead, since, even within the space of a few years, there may be many factors which distort the data from linearity.

Examples of prediction are given using data from Cambodia (Figures 57 - 64, Tables in Appendix 2). In this country we have year/grade data available for a period of six years. This is not sufficient for adequate prediction, nevertheless it does enable us to make some form of estimation. Since we have data between 1950 and 1955 it is possible to predict figures for enrolment and wastage for around the year 1960. Total enrolments for elementary education have already been published in the Unesco Yearbook, and it is therefore possible to observe the accuracy of prediction using trend statistics. Figure 57 shows the total enrolments in elementary schools for each year between 1950 and 1955. It will be

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* For a detailed account of enrolment projections on Thai data see Weesakul, B. Analysis and Interpretation of Education Statistics and Enrolment Projection. Unesco, 1965.

Table 5

VENEZUELA

Promotion, Repetition and Desertion Percentages at Different Ages in Elementary Education.

Year of Enrolment	Type	Age Groups 12 and under	 13 and over	1 - 5 Total
1958-59 to 1959-60	Promotion Repetition Desertion	66.08 24.61 9.31	66.25 14.02 19.73	66.11 23.22 10.68
1959-60 to 1960-61	Promotion Repetition Desertion	65.57 24.20 10.23	65.30 13.70 20.99	65.53 22.77 11.70

Source: Education and Economy in Venezuela. Unesco Mission Report, no. 15, 1962 seen that the figures lie almost in a straight line. This would suggest that any prediction, for the immediate future at any rate, may be fairly accurate. The trend line which has been calculated shows that the predicted enrolment estimated for the year 1959 is of the order of 578,000 children. The enrolment recorded in the Unesco Yearbook was 564,000 and thus the predicted enrolment involved an error of 2.48% over-estimation. It is worth noting that recorded enrolment figures are also subject to error in either direction and the above figure would be regarded as an acceptable estimation. However, if we extend the prediction beyond four years it is found that there is a considerable increase in error. In the year 1961 the predicted enrolment is 680,000 whereas the actual enrolment is 603,000. The error has now risen to an over-estimate of 12.77%. In 1962 the line we have calculated would give a predicted figure of 731,000 and the actual figure recorded in the Unesco Yearbook is 596,000; in fact a drop from the 1961 figure. The error on this occasion is 22.6% over-estimation. It can be seen that the observed graph line is beginning to decline, whereas our predicted line shows a constant rise. The example clearly indicates that the further we predict into the future the more error we are likely to make, since a variety of factors will have been introduced into the situation. Where there is rapidly increasing enrolment it is likely that a ceiling will be reached. This may be determined by the number of teachers available or the number of pupils who are ready for entry into a school. If figures are available on the number of schools, teachers and the birth rate for a number of years it can be predicted when these are likely to become limiting factors in terms of enrolment. It is possible to estimate the degree of error involved in a prediction by taking into account the extent to which observed figures deviate from the regression line. In this case such figures would not be very useful because only six readings are available. Nevertheless, methods of calculating the error of prediction can be seen in most standard textbooks on educational statistics.

In a previous section stress was layed on the desirability of examining sub-data in detail. Examples of this are given below. Figure 58 shows grade 1 enrolments to the year 1955. In that year grade 1 enrolments were of the order of 86,000. By 1960 the figure should have risen, according to estimates, to 146,000. Likewise, grade 2 enrolments would be expected to rise from around 66,000 to 106,000 by the year 1960. From such data it is possible to predict the actual number and size of classes required, the number of schools necessary given a certain size class in relation to teachers available, and also the number of classes within a given grade. In a similar manner we can plot the likely number of male and female pupils. This is important, since enrolment changes may alter the type of conditions and education needed within a school. Figure 60 shows that whereas there were something like 56,000 male pupils in 1955, 91,000 male pupils would be expected in 1960.

This compares with a predicted figure of roughly 55,000 female students in 1960 compared with 29,000 in 1955 (Figure 61). In other words, there were 27,000 more male pupils than female in 1955, by by the year 1960 this would be expected to rise to 36,000. Of course it may be anticipated that the ceiling for enrolments may be reached rather sooner for males than females, therefore the trend line for Cambodian males may be expected to show a decrease in its incremental rate and the discrepancy in number between the sexes will start to decrease. We may expect that the trend in enrolment figures for females is likely to remain the same or may show even greater increases as the ceiling of male enrolments is reached. However, other factors indigenous to each country may affect enrolment in very specific ways. When calculating size of school classes, number of schools and teachers needed we need to know not only the number of enrolments, or indeed the number of enrolments in each particular grade, but also the number of pupils dropping-out of the school system at each grade. If we look at the percentage loss from grades 1-2 in Cambodia (Figure 62) we see that the percentage loss gradually rises over the period 1950-55. In fact it rises from 4% in 1950 to 23% in 1955. There is some fluctuation between the years, but calculating a trend line suggests that by the year 1960 there will be something like 45% loss. In this way we can indicate areas where continued failure will cause increasing damage to the educational system, and we can also take into account the effect of this wastage in calculating our needs for educational purposes. For example, knowing the number of enrolments in 1960 we can estimate that only half of the number are likely to enrol in grade 2 in 1961.

Further information can be obtained from Figure 63. This shows the amount of loss from grade 5 (i.e. those who do not make their way up to grade 6). According to the trend line the amount of loss is gradually rising though not very steeply. An examination of the graph shows enormous variation in figures. Indeed, though we may predict from the line roughly that 8% will leave grade 5 rather than go on to grade 6 in 1960, the actual figures for previous years show considerable variation between one year and the next. The error involved in making a prediction can be calculated, though it would be dangerous to do so in this instance in view of the small amount of data available. Nevertheless a quick glance at the figures shows us that we are likely to be considerably in error, since over the six years for which data is available the amount of loss varied from an increase in enrolment of 1% to a decrease of 14%.

Figure 64 shows the percentage loss at grade 6 in relation to grade 1. This is of particular importance, since it illustrates that despite the marked increase in enrolment and decrease in holding power of grade 1 together with variability in holding power at grade 6, the amount of wastage over the elementary school cycle is decreasing. In 1950 65% of pupils were 'lost', but in 1954 this was reduced to 50%. If the trend shown in Figure 64 continues in its present form, wastage will

Figure 57

CAMBODIA

Based on Total Enrolment 1950-55

ENROLMENT TRENDS AND PREDICTION

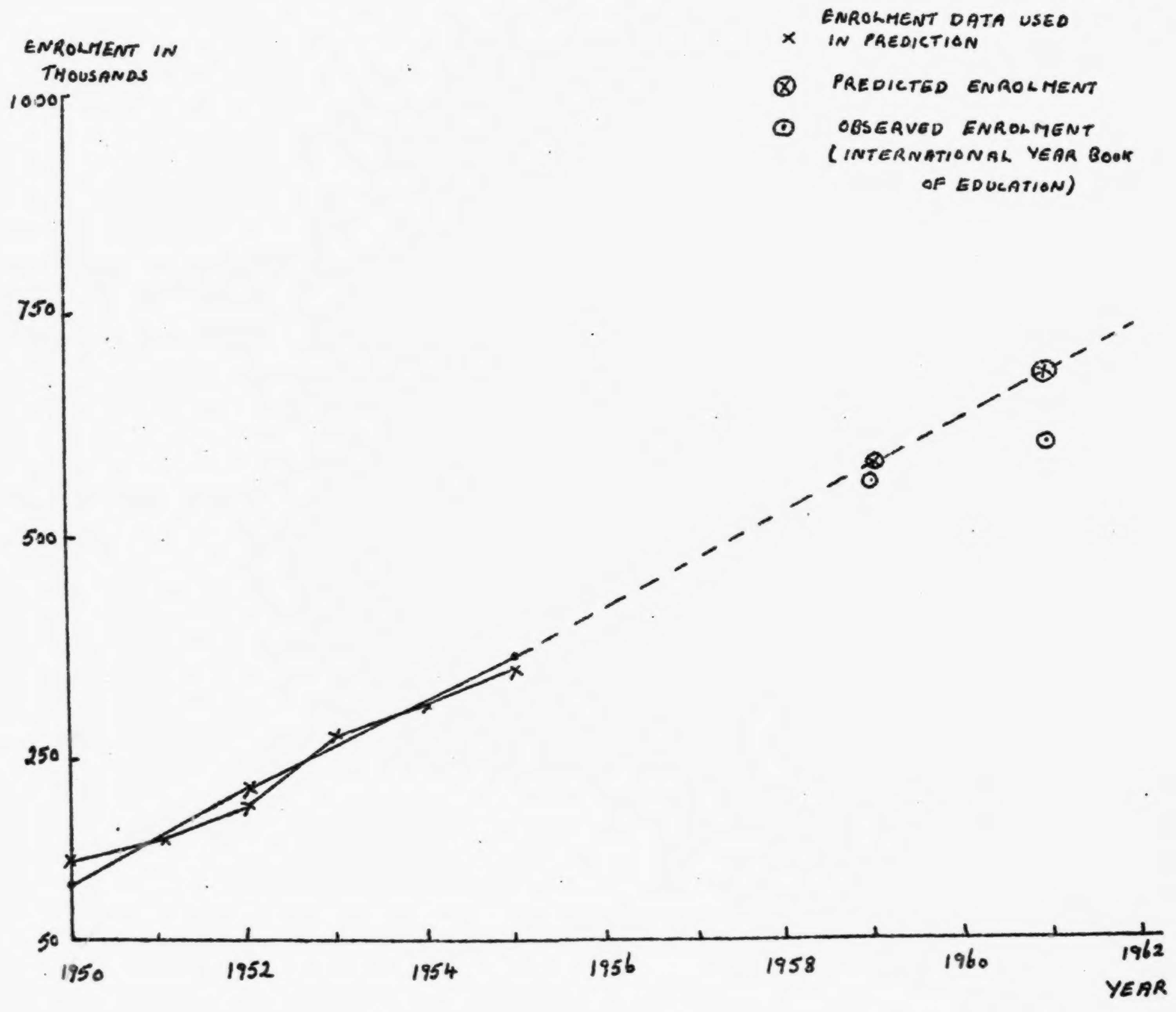


Figure 58

CAMBODIA

Based on Grade 1 enrolment 1950-55

ENROLMENT TRENDS AND PREDICTION

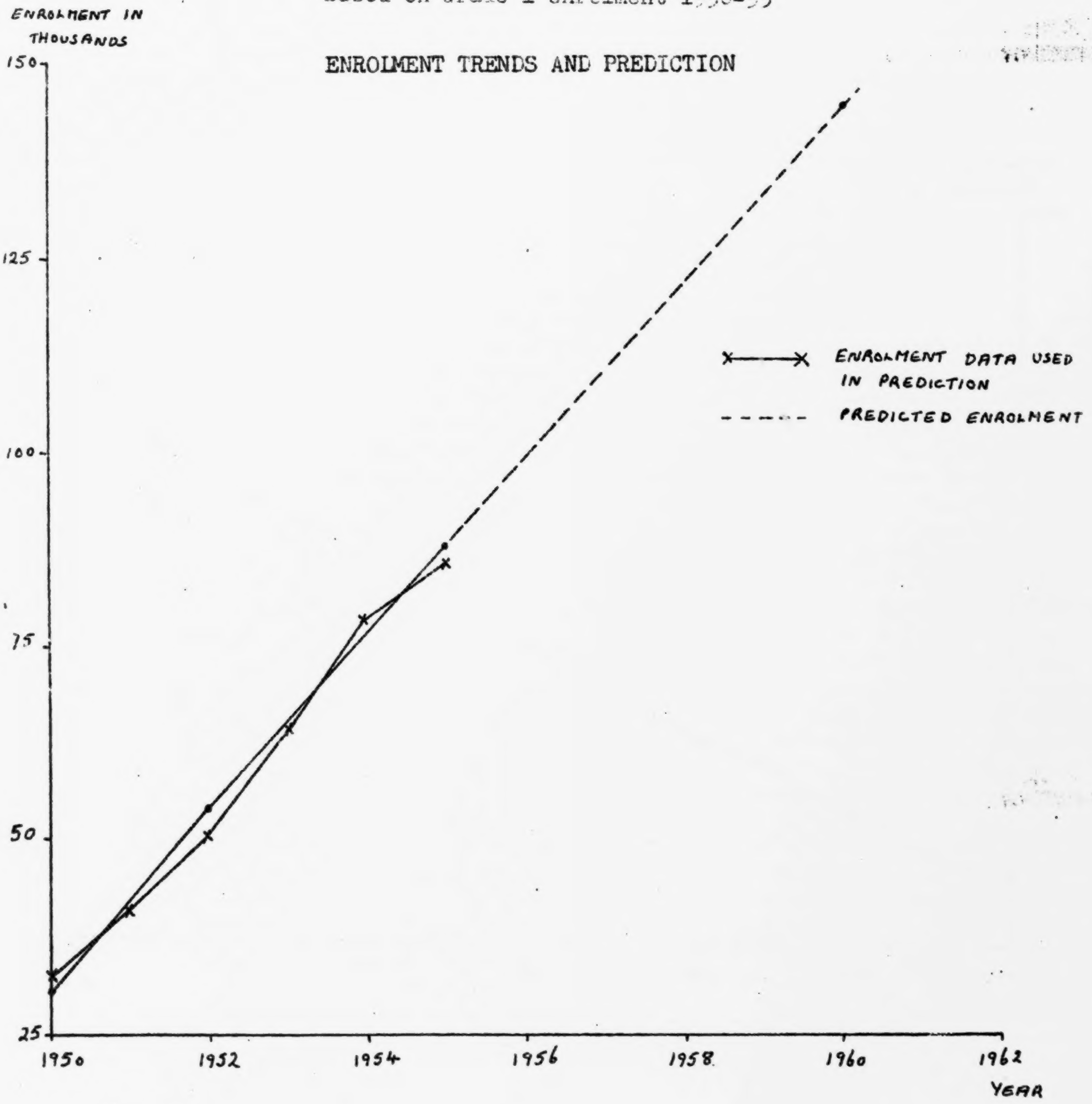


Figure 59

CAMBODIA

Based on Grade 2 enrolment 1950-55

ENROLMENT TRENDS AND PREDICTION

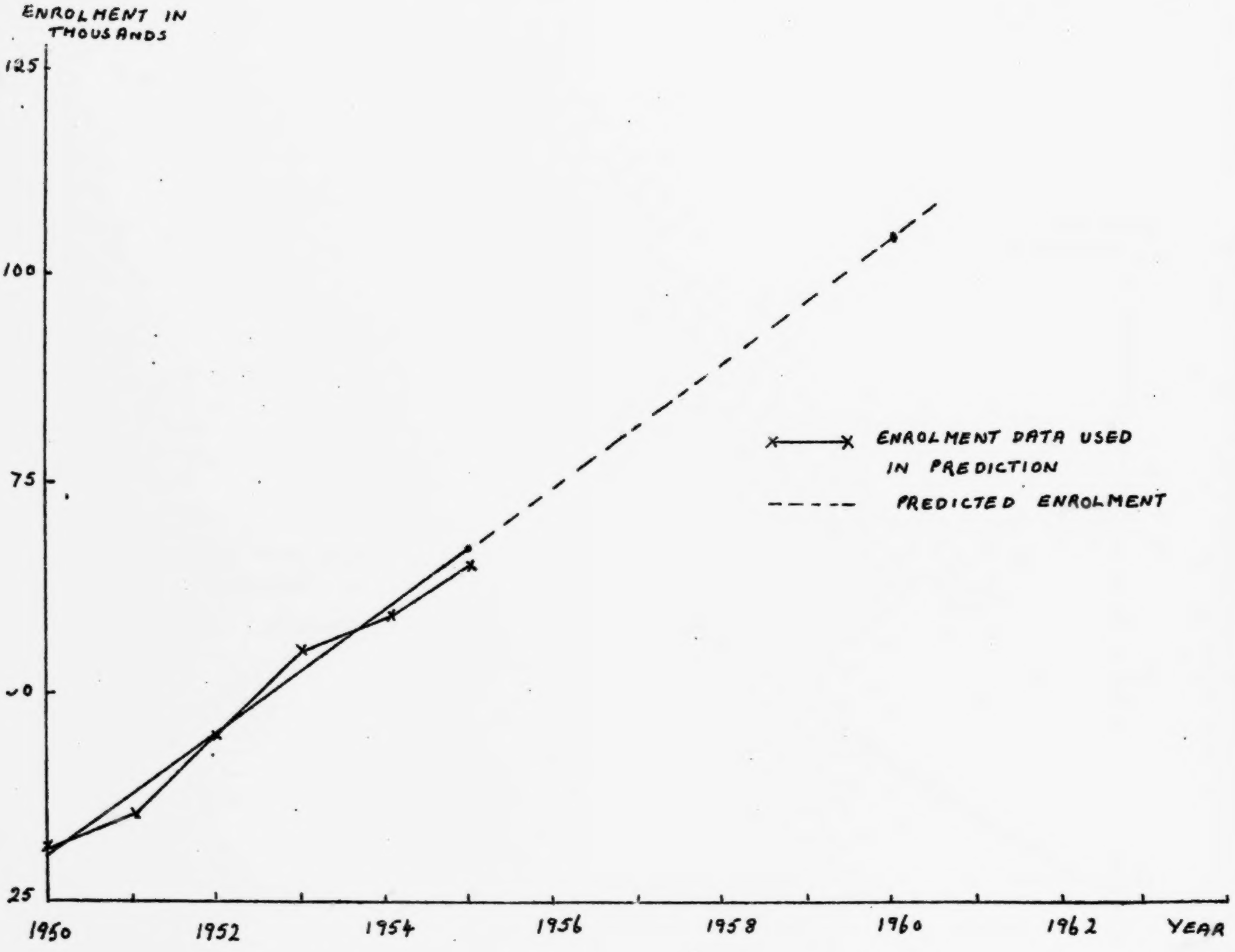


Figure 60

CAMBODIA

Based on Grade 1 Enrolments 1950-55
(Male)

ENROLMENT TRENDS AND PREDICTION

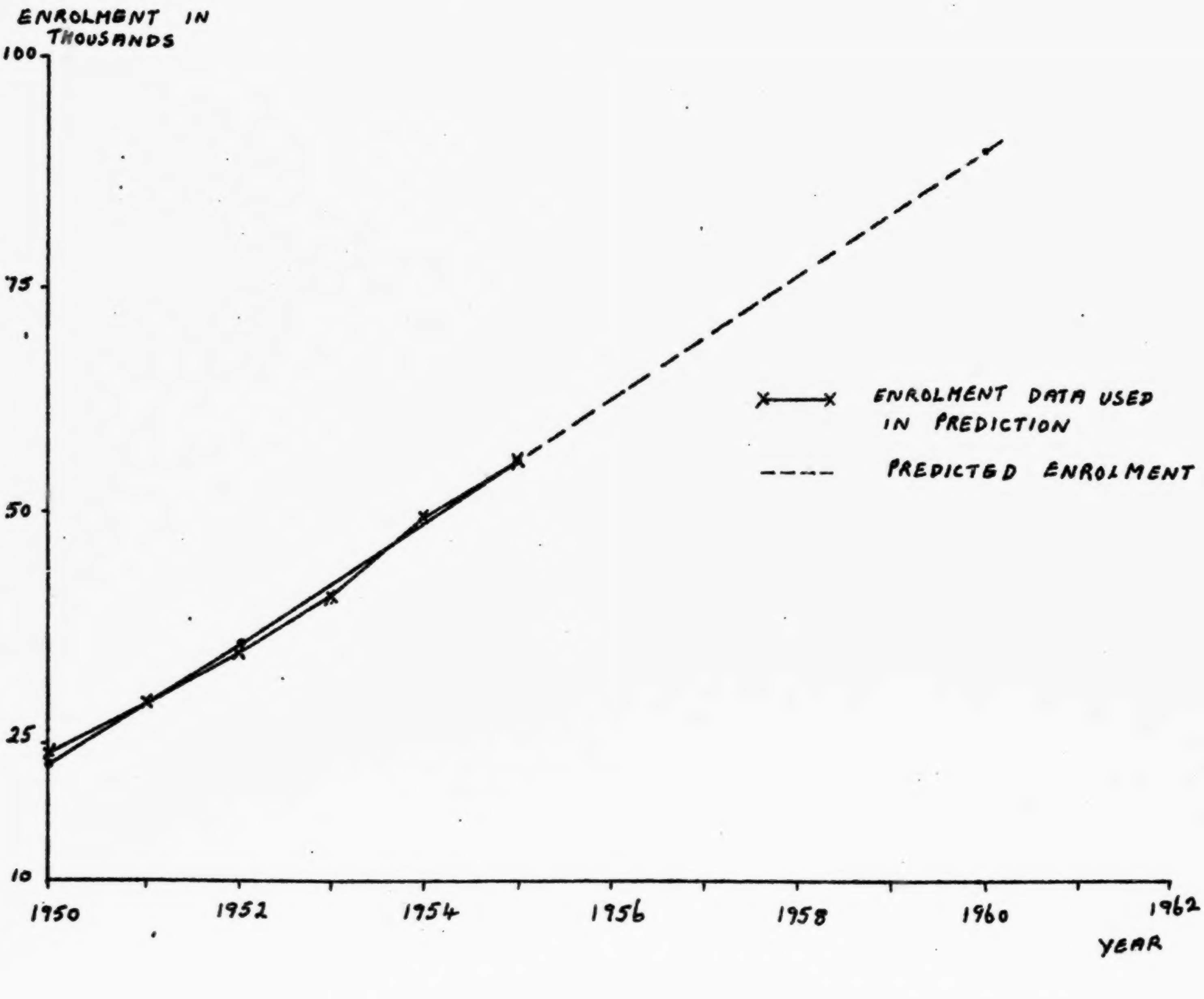


Figure 61

CAMBODIA

Based on Grade 1 Enrolments 1950-55

(Female)

ENROLMENT TRENDS AND PREDICTION

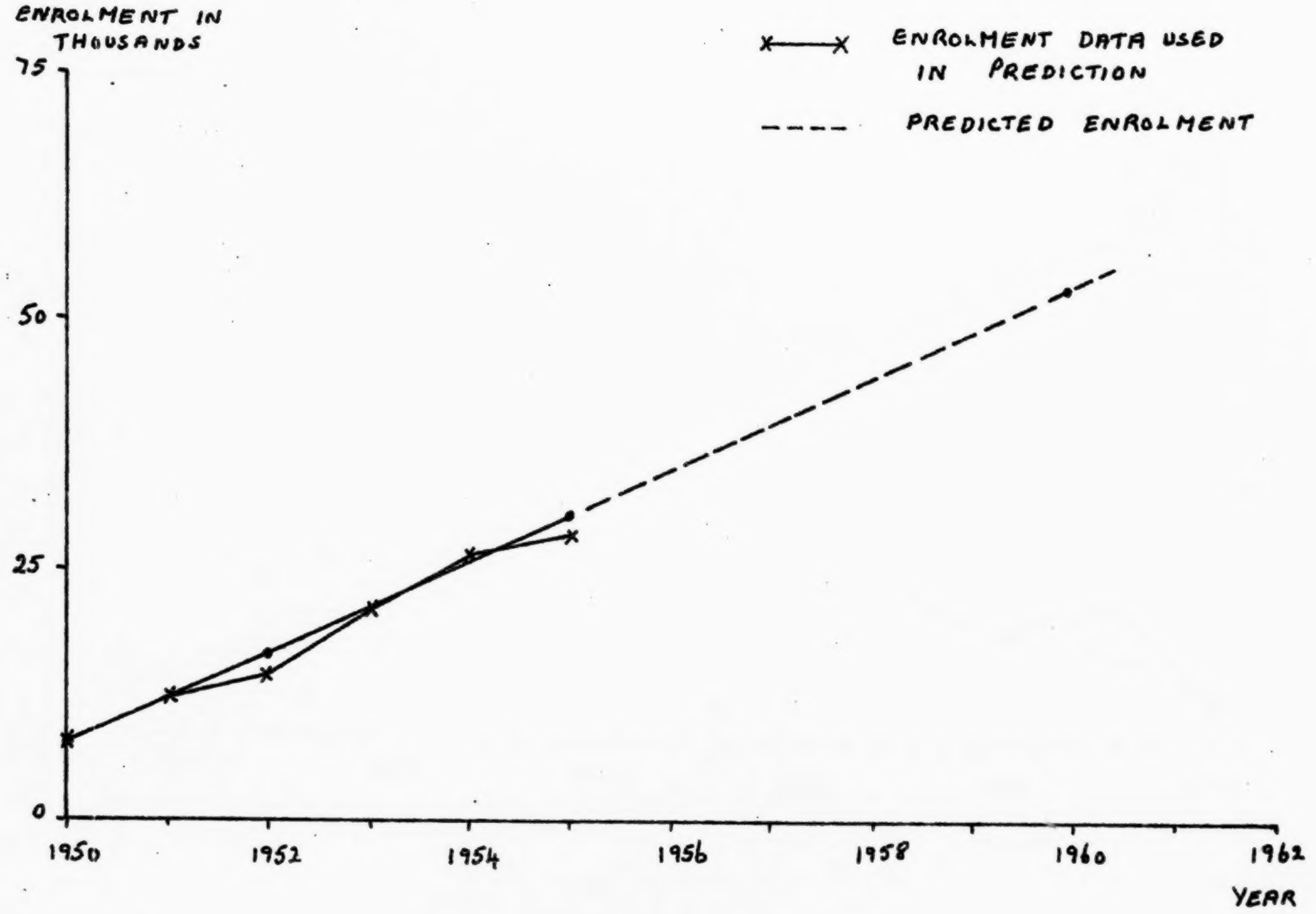


Figure 62

CAMBODIA

Grade 2: Based on Percentage Loss From Grade 1 1950-55

ENROLMENT TRENDS AND PREDICTION

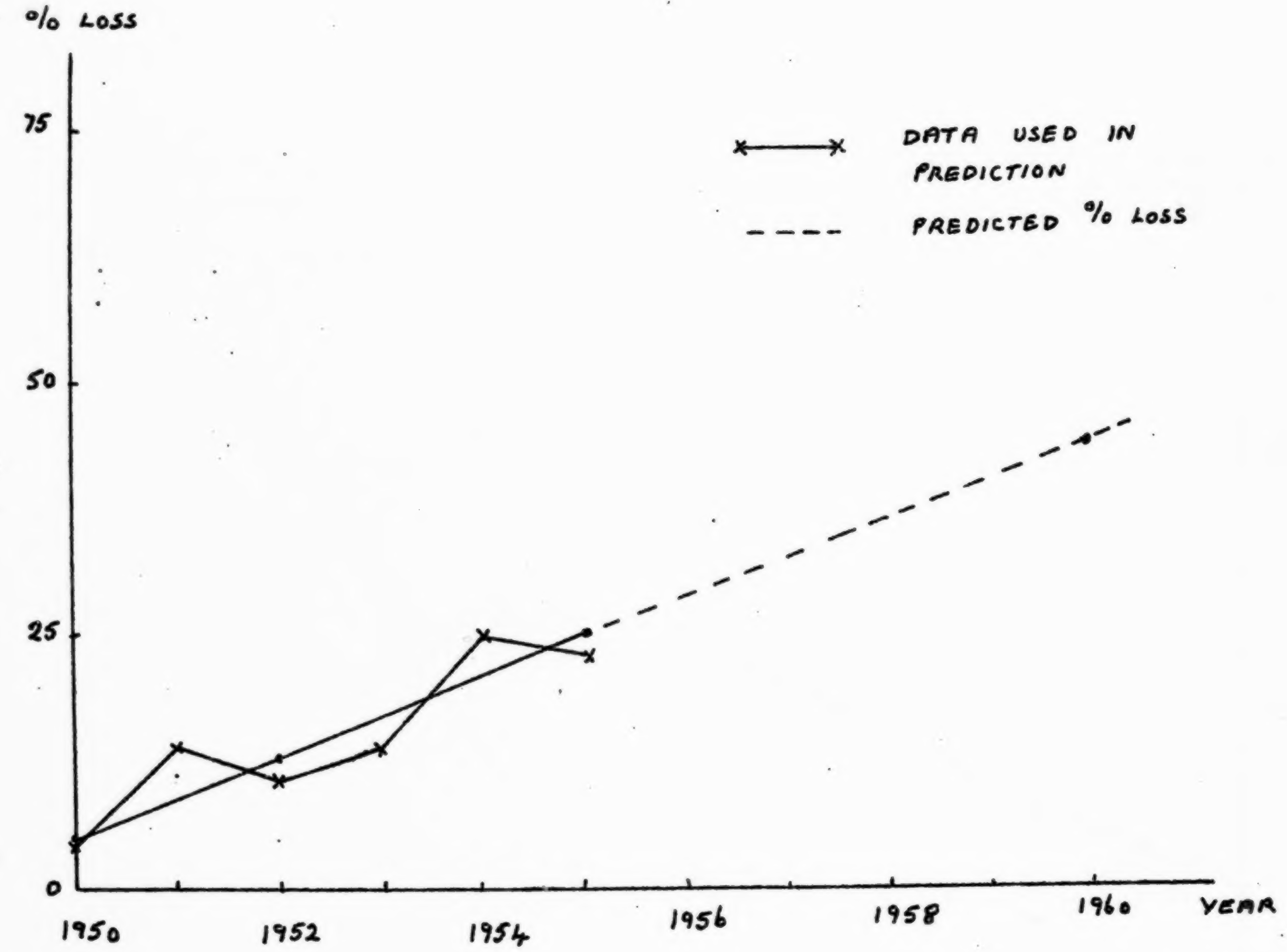


Figure 63

CAMBODIA

Grade 6: Based on Percentage Loss From Previous Grade
1950-55

ENROLMENT TRENDS AND PREDICTION

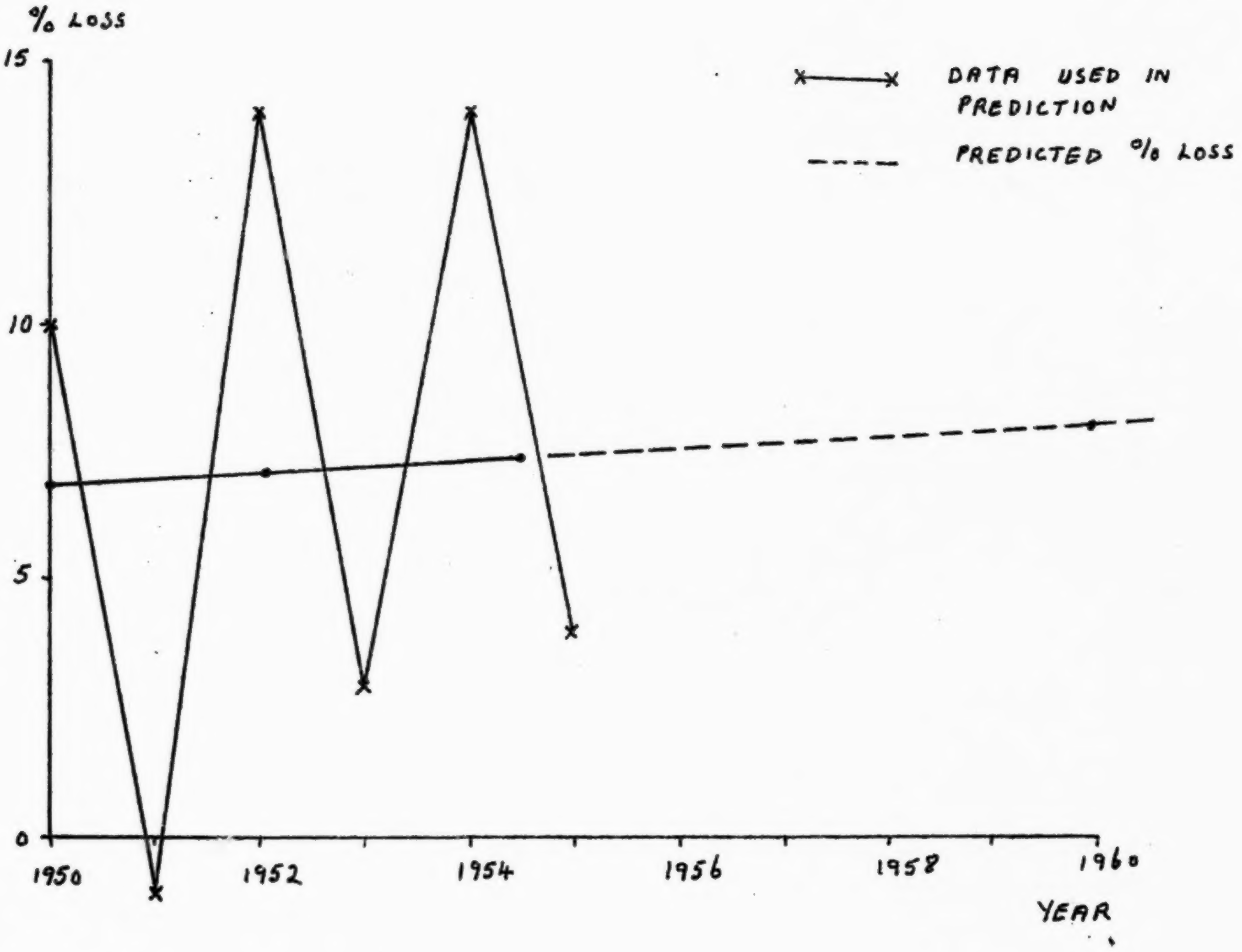


Figure 64

CAMBODIA

Grade 6: Based on Percentage Loss From Grade 1 1950-55

ENROLMENT TRENDS AND PREDICTION

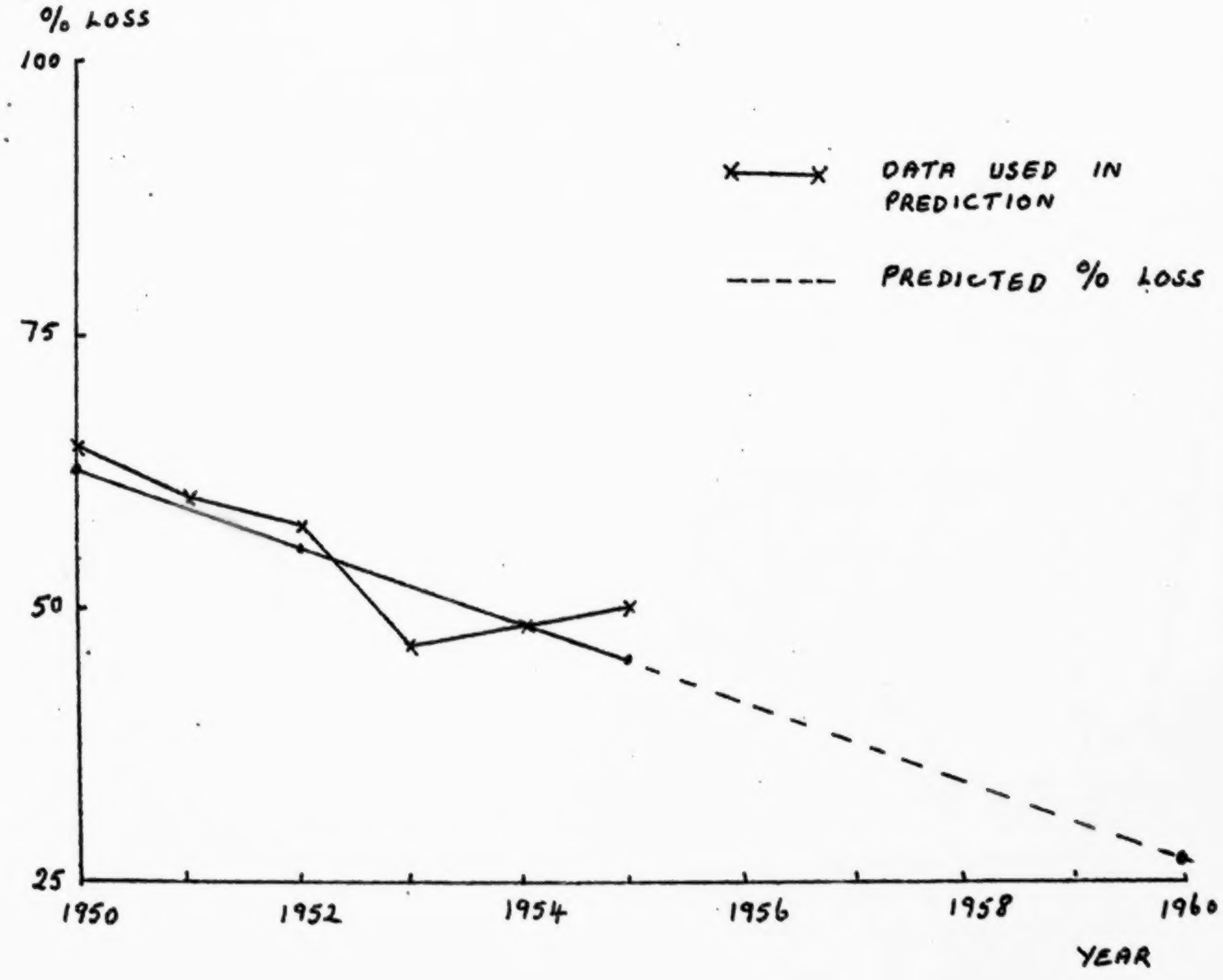


Figure 65

BASUTOLAND

Diagram Showing Drop-Out in Primary Schools

ENROLMENT TRENDS AND PREDICTION

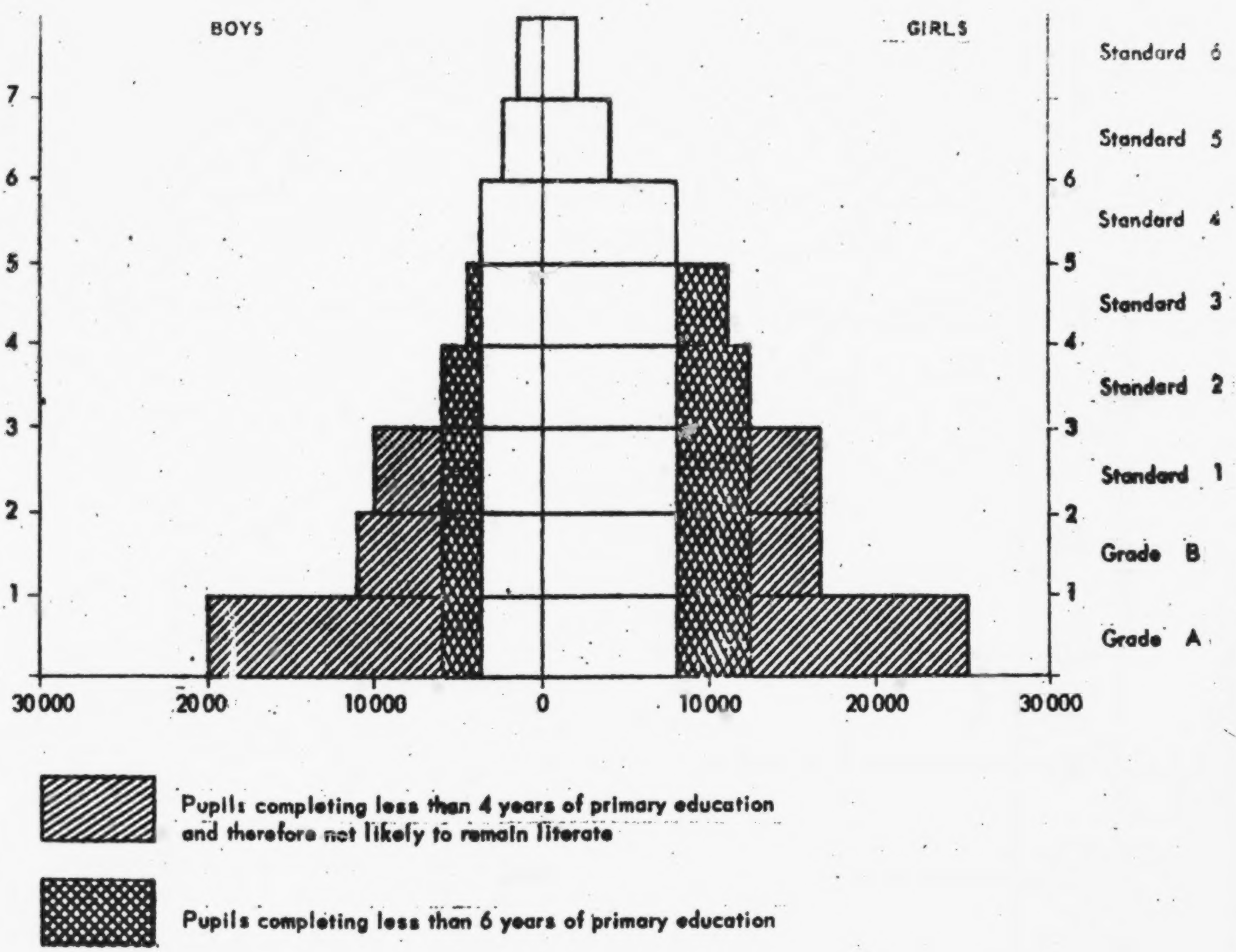


FIGURE 66--HIGHEST AND LOWEST RETENTION RATES IN PUBLIC ELEMENTARY SCHOOLS, PHILIPPINES: 1954-1955 TO 1959-1960

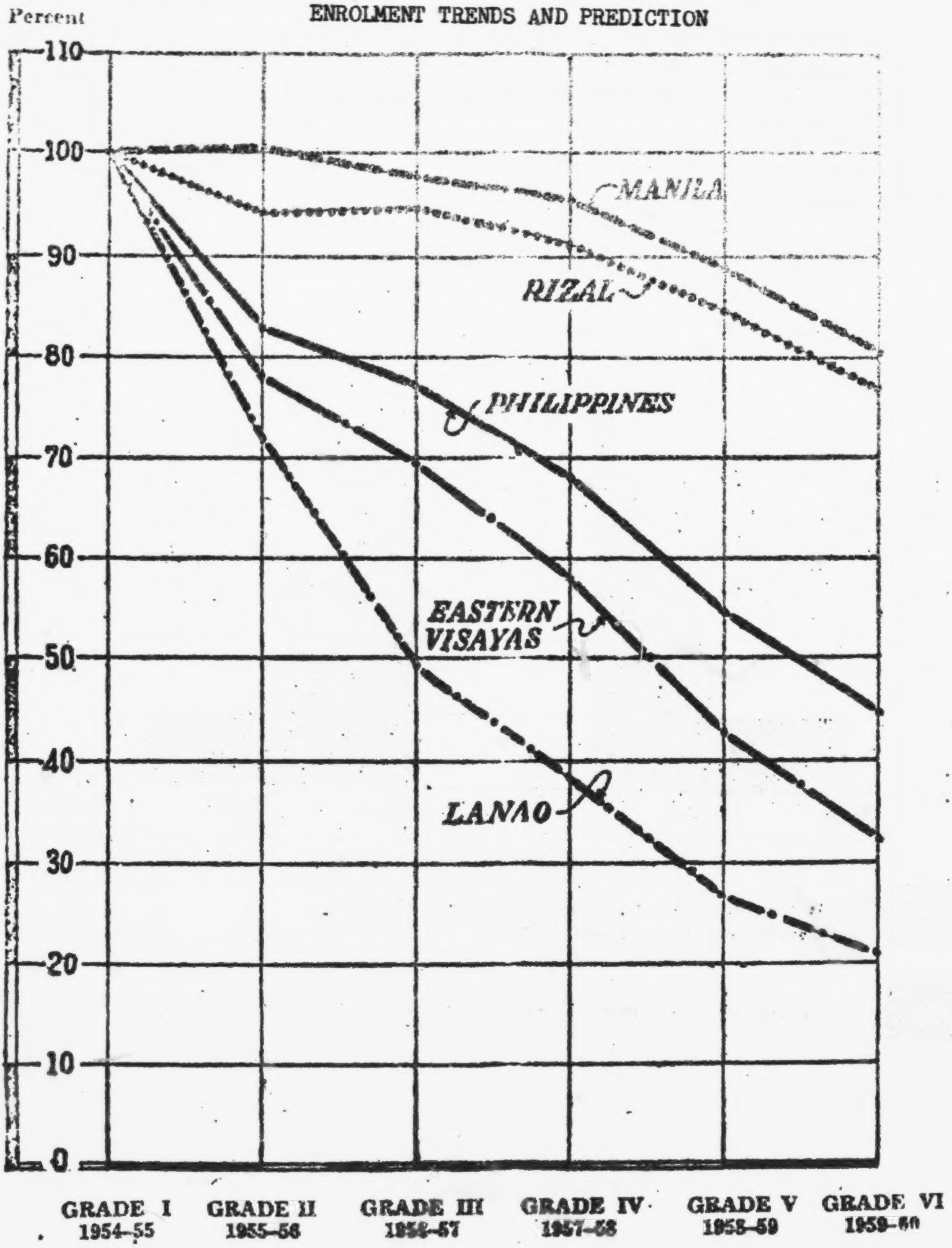
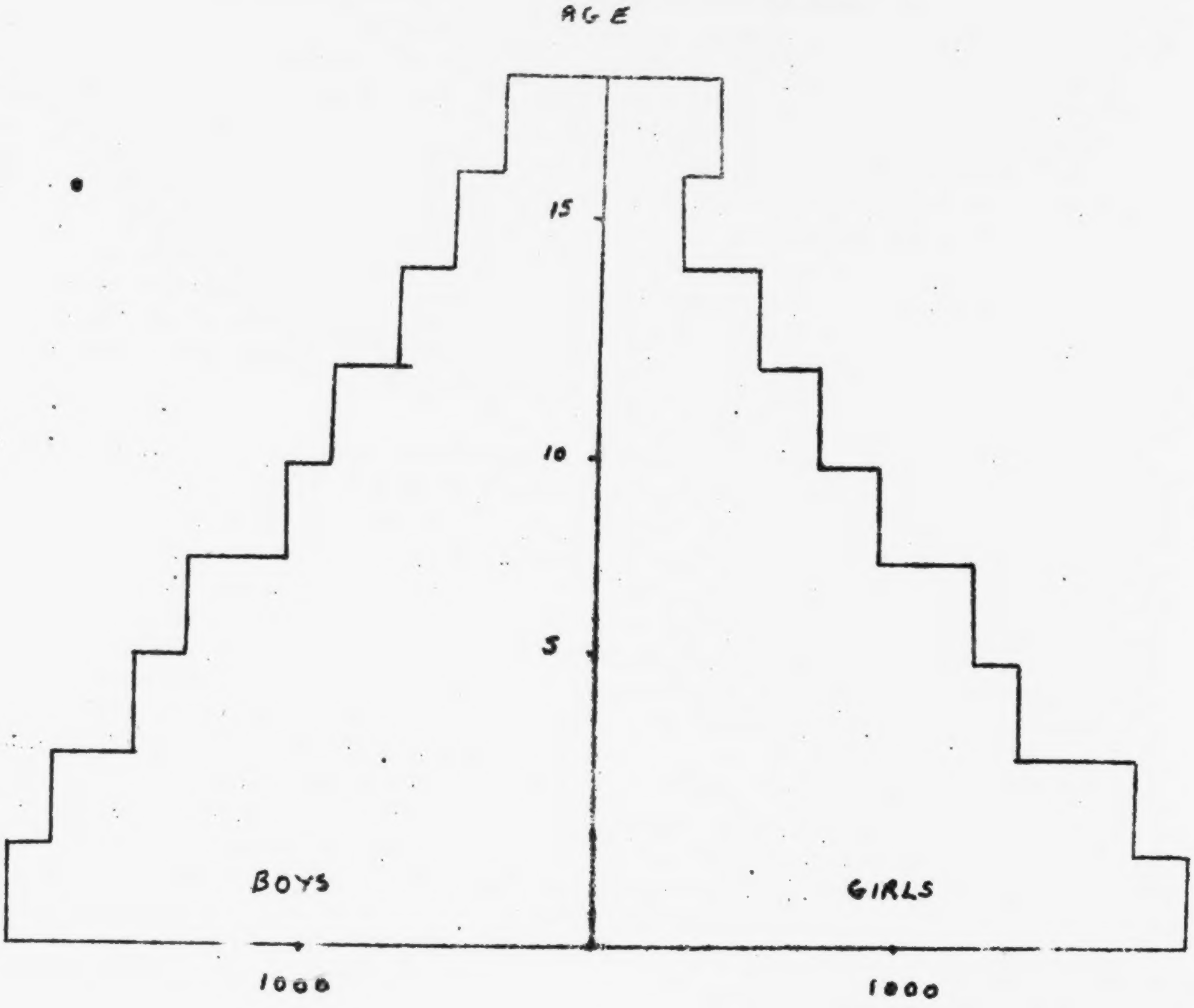


Figure 67

NORTHERN RHODESIA

(Luanshya)

African Child Population Mine Township



Source: Education for Africans in an Industrial Society. The Aspects of Wastage in Formal Education. In Teacher Education, 1961, 1, 3, 43 - 57.

reduce to 28% by 1960. This prediction may appear at variance with a number of previous statements. The reasons for this can be seen by looking back to the plotting of cohort data for several grades in Figure 34. Here it is indicated that although the first and second grades show a deteriorating picture, other grades show some improvement in terms of holding power. We need to bear these additional figures in mind when calculating and estimating for the future, since they may indicate points at which the trend will break away from linearity. It should also be stated that Figure 64, which is based on data over a period of six years to which a straight line graph has been fitted, may cover over two equal and opposite trends. The first four figures show a decrease in total loss from grade 1, while the last three figures show an increase in wastage. The data may be interpreted as indicating a change in the pattern of wastage which may be of particular relevance to future predictions. It is not possible to state whether this interpretation is more accurate than the suggestion that there is a gradual decrease in wastage with slight cyclic variations *. The important point is that variations in interpretations of this kind should be taken into account when making predictions.

An examination of the above figures shows some of the advantages and disadvantages of using trend plotting for prediction purposes. Trends can be calculated for a great variety of data, and it would be useful to have information for repetition, drop-out rates, and so on. A combination of such statistics would make prediction more valid, and it would also be possible to construct models for improvement of the holding power of schools. Nevertheless, as has been mentioned before, it is important to take into account the very considerable variations which may occur within a country. For example, what is happening in a rural district may be totally different from that in an urban area. Children whose parents are fairly high up in the socio-economic scale may show considerable holding power in school, the opposite may be true of those in lower socio-economic groups. These examples illustrate the need for more detailed information if we are going to make full use of trend plotting and obtain realistic estimates of error.

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* Trend lines are not necessarily linear in form and more complex functions may be more appropriately fitted to other data. It is therefore advisable to test for linearity as an initial step. It is possible that some data will show cyclical variations. Readers are referred to Moroney (1954).

Some Factors Causing Wastage

In this report we have been examining methods of measuring primary school wastage. It is now proposed to deal with some of the factors causing wastage. The factors examined so far have reflected the type of statistical data which have necessarily been collected for administrative purposes. These include data on enrolment, promotion, repetition and drop-out rates. If these are given in sufficient detail it is possible to examine the differences between male and female groups and differences between government and private school systems. Although this section will be concerned with these factors it is also proposed to deal with a number of sociological variables (e.g. rural versus urban living, travelling distances, economic stability of the family). In addition psychological and educational factors such as language difficulties and poor cognitive ability will be examined. All the factors have been put forward as important causes of wastage.

Error in enrolment figures

Before commencing an analysis of factors causing wastage it is perhaps appropriate to draw attention to errors which can arise in the recording of enrolment statistics. Such errors may lead to spurious estimates of wastage and false interpretations of its causes. An example of this is shown in the Final Report of the April/May 1962 Census of Africans in Southern Rhodesia. Census and official enrolment figures were compared. Details are shown in Table 6. According to census data the official figures at lower, upper and indeed post-primary grades are under-estimates of the number of students enrolled. At lower primary levels males and females were each under-estimated by approximately 14,000. The cause of this discrepancy is probably that official figures did not take into account the number of unregistered and recognised farm schools. Such figures would not include persons who studied privately or attempted to study through a correspondence course. Nevertheless, it seems possible that much of the discrepancy was due to errors in reporting either by schools or census staff. This may arise from lack of precise definition of 'school' in the instructions to enumerators, but may also arise as a result of error by the recorders. Errors of this type are common in 'record research' and adequate precautions need to be provided in order to estimate the degree of error. In some cases information may have been obtained from parents or others who knew the child. As the information was not obtained directly from the schools this could have leds to an additional degree of error. Even when a child is legitimately enrolled at school it does not necessarily follow that he attends school. The official figures indicate that 630,500 were actually receiving education. The total discrepancy between enrolment and census figures is 7.7%. This is an increase of census figures over official figures. Numerically, under census

Table 6

SOUTHERN RHODESIA

The Number of Persons at School. Census Results Compared with Official Enrolments

	Lower Primary		Upper Primary	
	Males	Females	Males	Females
Census Figures				
Adults: (Born before 1946) No.	11,320	7,720	17,990	10.040
%	19.1	13.0	30.3	16.9
Children: (Born 1946 and after) No.	280,030	236,160	41,120	26,120
%	47.5	40.1	7.0	4.4
TOTAL: No.	291,350	243,880	59,110	36,160
Official Figures No.	277,299	228,974	49,126	26,389
%	46.7	38.6	8.3	4.5

Source: Final Report of the April/May 1962 Census of Africans in Southern Rhodesia. Salisbury, 1964.

investigation, 48,712 more children and adults were thought to be receiving education than in the enrolment figures. Obviously the degree of error between enrolment figures and pupils receiving education in primary schools will vary considerably from country to country. However, the data given above suggests that enrolment figures by themselves are not adequate for compiling reliable statistics, and that additional sampling of school populations to check enrolment statistics should be used as a check on the amount of error that is occurring. This will enable us to make some compensation in constructing wastage tables.

Factors which are specific to school class structure

a) Promotion

Promotion rates in elementary education are determined by a number of factors and these vary from country to country. They may reflect administrative policy and be fixed for each grade. This may arise when the number of places made available in the school system are determined by non-educational factors. Promotion rates may also be influenced by teachers' judgments of children's ability and by the performance of pupils at examinations. They may also be determined by other factors of a socio-economic nature. For example, promotion levels may be influenced by the number of children still remaining in any particular grade at the end of the school year (i.e. after drop-out due to migration, ill health, etc.).

An educational provision policy which governs promotion rates may have a selective effect on drop-out and repetition. They may also be influenced by the extent to which repetition is tolerated by school and parents, and the degree to which any particular pupil is allowed to repeat more than once.

b) Size of class

Size of class is a fairly complex factor and involves not only the absolute number of children within a classroom, but also the relationship between the number of pupils and the physical size of the classroom and the number of teachers. It seems possible that wastage rates may be associated with such a factor, but existing evidence may not be suitable for analysis.

c) Classroom conditions

Classrooms vary in their standard and quality, and these variations may be relevant to wastage. Classrooms may be of poor physical construction and not suitable for their purpose. Ventilation, lighting and seating accommodation may vary in their standards, and in some countries tuition may take place out-of-doors. The relative importance of these factors may be influenced by other variables such as climatic conditions, and the need for more than one class grade to share the same room. The amount of time spent in the classroom may also be relevant (e.g. shift systems, varying location for different activities).

d) Teachers

The availability, quantity and quality of teachers may be important factors in wastage. Teachers may have to teach several grades at one time and rural areas may work on a shift system. Thus, not only is teacher: pupil ratio important, but also the extent to which the teacher can devote attention to any class or individuals within that class. These factors may be relevant in a number of ways including the extent to which a teacher can have detailed knowledge of a child's ability, attainment and home background. This will obviously affect the ability of the teacher to meet any individual's particular needs.

e) Age range

Age ranges vary considerably. In some areas automatic promotion from year to year is required, and in others a certain amount of age variation is found within a class, particularly when children may not enter the system at the same age. However, in many countries an extremely wide age range is tolerated (e.g. enrolment age by grade, Table 7a, Jamaica; Table 7b, British Guinea). In some cases grade 1 ages may show a much wider range than in Jamaica and include adults. It seems possible that such diversity within any one class could affect wastage rates in terms of drop-out, and also be a cause of as well as a reflection of the amount of repetition. This particular variable may also be related to other factors such as promotion rates which are discussed above.

Promotion Rates

When considering promotion rates it is necessary to take into account the degree of non-registration. In any country where there are no facilities for full registration there will be some form of selection operating. It seems possible that those children who come from the more wealthy families, and who may also be of high intelligence, are more likely to be selected for schooling than other children (e.g. Venezuela). Other factors such as short travelling distance and high motivation on the part of the pupil may also be relevant. Once selected it seems reasonable to suppose that those children, amongst whom positive factors are more apparent, will be more likely to continue with their education from one grade to the next than those amongst whom the factors are absent.

Table 7a

JAMAICA

Pre-School and Primary Education (Public)

Enrolment[b] by grade, by age, Dec., 1963

Age	Infant			Junior Division						Senior Division				Totals
	Boys	Girls	Total	1	2	3	4	5	Total	Form 1	Form 2	Form 3	Total	
4	800	912	1082	-	-	-	-	-	-	-	-	-	-	1082
5	1827	1954	3781	-	-	-	-	-	-	-	-	-	-	3781
6	1650	1700	3350	823	21	-	-	-	844	-	-	-	-	4194
7	259	281	540	35594	8128	887	62	6	44677	-	-	-	-	45217
8	-	-	-	11502	22226	7850	926	107	42611	-	-	-	-	42611
9	-	-	-	2455	10794	19686	6624	1163	40722	9	2	-	11	40733
10	-	-	-	611	2790	10444	18366	6660	38871	68	19	-	87	38958
11	-	-	-	100	627	3027	9520	15455	28729	889	179	24	1092	29821
12	-	-	-	24	146	742	2894	6800	10606	17829	7090	1586	26505	37111
13	-	-	-	1	-	1	14	41	57	7178	12712	6670	26560	26617
14	-	-	-	-	-	-	-	5	5	2116	5591	13074	20781	20786
15 and over	-	-	-	-	-	-	-	-	-	255	981	4923	6159	6159
Total	4536	4847	9383	51110	44732	42637	38406	30237	207122	28344	26574	26277	81195	297070

(a) i.e. Government and aided Infant, Infant Departments, Junior and All-Age Schools, but excluding Senior Schools

(b) This Table shows actual numbers on school registers as on December, 1963, which consequently differ from those shown for average annual enrolment shown on other Tables.

. British Guinea

TABLE 7b

Enrolment of pupils in primary education by age and grade[a], 1961-1962

Age groups (years)	1st year		2nd year		3rd year		4th year		5th year		6th year		7th year		8th year		Total		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	Total
Under 6	2,706	1,683	31	52	-	3	-	-	-	-	-	-	-	-	-	-	2,737	1,743	4,480
6 and under 7	5,216	5,03	1,548	1,757	59	76	3	3	-	-	-	-	-	-	-	-	6,326	6,366	13,692
7 and under 8	4,756	3,537	2,752	2,331	357	1,081	55	73	4	2	-	-	-	-	-	-	8,424	7,544	15,968
8 and under 9[b]	2,911	2,562	2,234	2,155	3,401	2,340	1,015	915	65	109	4	10	1	-	-	-	10,232	8,199	18,431
9 and under 10	466	330	1,316	927	2,438	2,245	2,946	2,057	2,553	644	603	134	10	7	-	-	10,332	6,314	17,146
10 and under 11	[illegible]	254	378	432	2,172	911	2,151	2,053	1,935	1,864	1,394	1,525	144	151	50	13	8,379	7,309	15,683
11 and under 12	62	49	107	136	301	2,270	3,127	2,733	1,347	1,946	1,573	1,552	400	419	203	126	8,125	9,351	17,476
12 and under 13	42	24	15	47	234	65	160	266	1,243	1,027	1,514	1,626	1,230	1,351	353	490	5,172	4,920	10,091
13 and under 14	23	15	10	11	66	69	435	291	530	303	1,316	2,941	1,274	1,226	1,806	1,486	5,482	6,849	12,331
Over 14	10	-	21	11	45	28	143	233	405	306	426	[illegible]	1,134	2,878	2,352	2,090	4,603	5,932	10,535
Total	16,236	13,595	9,692	6,065	10,145	9,112	9,271	6,604	8,587	6,906	6,857	8,336	4,243	6,034	4,770	4,275	69,811	65,007	134,818[a]

[a] The Table was prepared in March 1963, when all figures for 1961-1962 were available. There is a significant discrepancy of 577 between the Total here and the Total arrived at by the Mission.

[b] There are over 5,000 children between the ages of eight and nine years in their first grade at school.

Repetition as a cause of wastage

The probability of drop-out may increase with repetitions. This at least would appear to be one interpretation of a report entitled 'An Investigation into Wastage and Stagnation in Primary Education Satara District' by V.M. Dandekar, in India. Table 8 shows the percent wastage in different classes of elementary education according to the number of years children have spent in school before leaving. It is apparent from this table that the greater the number of years a child is in a particular grade the more likely he is to drop-out.

If we look at the progress of children who spend one year in each grade (although it should be noted that this is not cohort data) it seems that most children drop-out in the first grade. The figures for each grade are as follows: 5.7%, 2.75%, 1.55% and 1.99%. However, if we look at any one grade, for example the infant grade, we find over the same period of time that the percentage losses are 5.7%, 13.6%, 15.1% and 25.8%. If we follow these figures to the eighth year of education in the same grade, drop-out rises to 35%. Other grades also show an increase in drop-out over the year. For example, 1.99% of children in grade 3, with four years of education and no repetition, drop-out of the school system; with five years of schooling (i.e. one repetition) 4.33% of grade 3 pupils drop-out, and the percentage rises to 27.55% after ten years in school. It can be seen that the greatest increase in drop-out is amongst those who remain in the first class. It would appear therefore that previous success in the form of promotion is associated with staying on in school. Those who have no success are more likely to drop-out than those who have some degree of success in the early stages of education. There is one other important point associated with this table, namely, initial drop-out rate at the infant level is only 5.7%. The percentage drop-out rate increases the longer the children stay in that grade. In other words, although percentage loss is greatest in grade 1, and this has been found to be true of cohort data from a number of countries, this type of wastage may be largely due to repetition followed by some drop-out after spending several years in the same grade. Figures quoted earlier in the dissertation are consistent with this interpretation.

Age

In some countries there is a very wide age range of children in each class. This has been referred to earlier (page 96), and it is possible that this could be a cause of wastage. For example, Table 9 (The Satara Report) shows that in infant grades ages range from 6-14 years, with an average of 7.81 years. The average drop-out age for the infant grade is 9.28 years. The average age in grade 1 is 9.47 compared with an average drop-out age of 11.17 years. Similar

Table 8

SATARA INDIA

Percentage of drop-out in different classes according to the number of years spent in school before leaving

Years in School	Infant	1	2	3
1	5.7	-	-	-
2	13.6	2.75	-	-
3	15.1	5.46	1.55	-
4	25.8	8.58	3.67	1.99
5	24.9	14.16	5.28	4.33
6	32.2	17.16	9.78	4.75
7	29.8	17.72	13.45	6.27
8	35.0	20.51	23.08	10.18
9	-	22.50	23.88	13.79
10	-	-	-	27.55

Source: Report of an Investigation into Wastage and Stagnation in Primary Education. Poona, 1952.

Table 9

SATARA, INDIA

Age Distribution and Average Drop-out Age of Boys in Different Standards (Local Board Schools)

Age	Infant	STANDARD I	II	III	IV
6	17.43	-	-	-	-
7	31.13	7.61	0.98	0.90	-
8	22.86	20.56	11.06	1.72	0.04
9	15.61	28.99	17.46	7.09	1.47
10	8.39	17.15	23.74	12.59	6.62
11	3.40	16.93	22.49	27.80	11.88
12	1.10	5.05	12.67	25.88	28.13
13	0.05	2.74	6.97	12.75	22.91
14	0.03	0.72	3.14	6.54	18.69
15 and over	-	0.25	1.49	4.73	10.26
Total	100.00	100.00	100.00	100.00	100.00
Average Age	7.81	9.47	10.47	11.56	12.68
Average Drop-Out Age	9.28	11.17	11.98	12.92	-

Source: Tables 58 and 59 in Report of an Investigation into Wastage and Stagnation in Primary Education (Satara District).

discrepancies were obtained for grades 2 and 3. This indicates that it is generally the older children in any grade who tend to leave the school. This may be a reflection of repetition in that drop-outs may have already spent several years in school, though it may be that older children tend to leave the school rather more rapidly even when they have not repeated grades. (See also data for Venezuela, page 76).

Size of class - Complex of wastage factors

Size of school class appears to be associated with drop-out and repetition rate. Table 10 shows the size of school classes at different grades in Bechuanaland. Larger numbers of pupils per class are found in the lower grades of the school system than in the higher grades. It has been demonstrated earlier that repetition and drop-out rates are often at a peak in the first grade of elementary education. It seems that where children gain their first impressions of education class conditions are at their worst. Not only are classes large and repetition rates high, but the age range of children may be very wide. It also appears that classes in rural areas are considerably larger than classes in urban areas. For example, in Chile the teacher: pupil ratio is 1:49.4 in rural areas and only 1:33 in urban areas. The problem may be exacerbated by the fact that in some countries, like Brazil, rural education has to be worked in shifts. The amount of strain on teachers is therefore considerable. It is also likely thatbetter qualified teachers tend to congregate in urban areas where facilities are better.

In addition to the poor teacher: pupil ratio in rural areas, and the large amount of drop-out and repetition, transfer from rural areas to urban (or initial enrolment in urban schools by rural children) may occur in some countries. This places an additional burden on urban primary schools. This is demonstrated in the data from Brazil. School enrolment percentages for urban and semi-urban primary school-age populations were 57.34% in 1950 and 57.03% in 1960. The fact that about 43% of children of elementary age living in urban areas were still out of school seems partly due to the influx of children from surrounding rural areas.

There is little scientific evidence to show that size of school class is necessarily related to high drop-out or repetition rates. The important point is that poor teacher: pupil ratio is one of the variables in a complex of factors which are closely related to inefficient educational systems. The efficiency of an educational system which does not have automatic promotion presumably depends on the teacher/year product i.e. the proportion of children within a class for whom a teacher can secure promotion in a given year. It should be possible to obtain such data, and it seems likely that this would be

Table 10

Size of Primary Classes in Bechuanaland

(From March 1964 Quarterly Returns)

Number of Pupils in Class	Std. 1	Std. 2	Std. 3	Std. 4	Std. 5	Std. 6	Std. 7	TOTAL
Below 30	66	100	117	136	103	107	55	684
31 - 39	39	58	40	36	24	30	59	266
40 - 49	85	46	73	39	42	34	38	357
50 - 59	60	48	37	13	19	10	1	188
60 - 69	45	17	13	9	4	-	-	89
70 - 79	34	26	8	-	2	-	-	70
80 and over	28	25	3	1	-	-	-	57
TOTAL	357	320	291	234	194	181	134	1,711

Source: Expanded Programme of Technical Assistance. Bechuanaland Educational Planning Mission, Unesco, 1964.

of importance in estimating the most efficient class size for particular areas and grades of study. The factors which appear to be involved in wastage include poor teacher: pupil ratio, shift system, rural areas involving long journeys to school sometimes over difficult country without adequate transport, possibly less adequate teachers, and certainly teachers under considerable stress, poor enrolment and attendance which involves large age ranges in any one class, and also a large degree of repetition and drop-out.

Illiteracy - An effect of wastage

It is apparent that if there is a high level of drop-out or repetition there will be considerable illiteracy. It is estimated that at least four years of primary education are required if pupils are to remain literate. This also supposes that children are promoted from one grade to another in order that they may be presented with an advancing range of educational material. Figure 65 shows drop-out in primary schools in Basutoland. It can be seen that those receiving less than four years education make up the greater part of the school population. From what has already been seen of rural and urban education it can be assumed that illiteracy will be much greater in the former than in the latter, (for example, in Cambodia it is estimated that illiteracy is twice as great in rural as in urban areas) not only because of poorer educational facilities in rural schools, but also as a result of inferior enrolment percentages.

Data from Southern Rhodesia shows a similar problem at the adult level. It is believed that 36% of adult males and 37% of adult females left school in Southern Rhodesia from standard 3 or below. It is thought that these will be literate in the simple sense in that they can read and write in their vernacular language, but it is generally believed that literacy in the latter is achieved only after four years of primary education and literacy in the English language after five years of primary schooling. A large number leaving school at standard 3 and below would not have achieved literacy in any language, and it is also important to note that 47% of all males and 59% of all adult females have never been to school and must be considered to be illiterate. In addition, pupils in rural areas are likely to receive less adequate schooling than children or adults in urban areas.

Attendance Officers - Relation to wastage

In 1965 a study was carried out to encourage children to continue with their education and dissuade them from dropping-out of the elementary school cycle. (See A Survey of the Public Schools of the Philippines, 1960). Teachers were appointed to work on the improvement of attendance in 46 divisions and six cities (Table 11). Enrolment increased substantially. The number of drop-outs decreased and a large number of children were persuaded to return to school. It should be pointed out that the Act which made education compulsory did not include penal provisions if the children did not attend school. This study is obviously extremely encouraging, though one would like to see further development of this type of work with additional controls built in so that the effect of other variables can be eliminated. For example, it would be desirable to compare the attendance results in those schools where there is a teacher concerned with improving attendance with those of schools which do not have attendance officers. Without such controls it is not possible to state conclusively whether improvement is due to the work of attendance officers or to other changes which happen to have occurred at the same time.

Pupil variables and wastage

A number of factors directly concerned with the pupils' background are possibly related to wastage.

Socio-economic level

This may be regarded as a very broad factor including not only the economic status of the child's parents, but also the area from which the child comes. For example, the number of African children receiving primary education in Southern Rhodesia varies according to the area in which the child lives. Table 12 gives detailed figures of educational grades (standards) for children in different areas. Table 13 shows the proportion of children born in 1946 who have never been to school. It will be seen that a smaller percentage of children in rural areas attended school than children in urban areas. Furthermore, a lower percentage of children living in European farming areas received education than of children living in African rural areas. Broadly speaking the above is true of both boys and girls. However, the percentage of girls receiving education throughout the country is rather less than that of boys, though the discrepancy is less marked in the first three grades of elementary education in urban areas. It should be noted, of course, that at the time of the census these children would be sixteen years old, or younger, and therefore it is likely that many of them would receive education at a later date. The importance of this table therefore lies not in the large numbers not receiving education, but in the relative proportions between the different areas.

When we turn from enrolment to drop-out and repetition it can be seen that urban/rural differences may be complicated by a number of factors. For example, if a boy who comes from an agricultural community

Table 11

PHILIPPINES

Increase in Enrolment, Decrease in Drop-Out and Number of Pupils Persuaded to Return to School in 46 Divisions and 6 Cities 1956-1957

Grades	Change from Preceeding Year		Number persuaded to return to school
	Increase in Enrolment	Decrease in drop-outs	
1	9,314	1,306	5,435
2	4,417	741	3,940
3	2,044	887	2,338
4	2,255	748	1,776
5	2,710	371	2,061
6	1,260	480	1,267
TOTAL	22,000	4,533	16,817

Source: General Office, Bureau of Public Schools, Philippines.

Table 12

SOUTHERN RHODESIA

Educational Standard of Children Born in 1946 and After by Type of Area.

		Never Been to School	At School			Left School		TOTAL
			Std. III and Below	Stds. IV-VI	Over Std.VI	Std. III and Below	Over Std.III	
African Rural Areas:								
Boys	No.	347,330	204,380	23,870	1,500	14,580	3,030	594,690
	%	58.4	34.4	4.0	0.2	2.5	0.5	100.0
Girls	No.	378,640	173,680	14,240	720	24,000	2,830	594,110
	%	63.7	29.3	2.4	0.1	4.0	0.5	100.0
TOTAL	No.	725,970	378,060	38,110	2,220	38,580	5,860	1,188,800
	%	61.1	31.8	3.2	0.2	3.2	0.5	100.0
European Farming Areas:								
Boys	No.	132,320	40,110	4,780	270	6,980	870	185,330
	%	71.4	21.6	2.6	0.2	3.8	0.4	100.0
Girls	No.	140,800	29,800	3.430	580	7,420	600	182,630
	%	77.1	16.3	1.9	0.3	4.1	0.3	100.0
TOTAL	No.	273,120	69,910	8,210	850	14,400	1,470	367,960
Urban Areas:								
Boys	No.	62,460	35,540	12,470	2,200	4,340	1,660	118,670
	%	52.6	29.9	10.5	1.9	3.7	1.4	100.0
Girls	No.	64,060	32,680	8,540	1,020	3,720	960	110,890
	%	57.8	29.5	7.6	0.9	3.4	0.8	100.0
TOTAL	No.	126,520	68,220	20,920	3,220	8,060	2,620	229,560
	%	55.1	29.7	9.1	1.4	3.5	1.2	100.0
All Areas:								
Boys	No.	542,110	280,030	41,120	3,970	25,900	5,560	898,690
	%	60.3	31.2	4.6	0.4	2.9	0.6	100.0
Girls	No.	583,500	236,160	26,120	2,320	35,140	4,390	887,630
TOTAL	No.	1,125,610	516,190	67,240	6,290	61,040	9,950	1,786,320
	%	63.0	28.9	3.8	0.3	3.4	0.6	100.0

Source: Final Report of the April/May 1962 Census of Africans in Southern Rhodesia. Central Statistics Office, Salisbury, Southern Rhodesia.

Table 13

SOUTHERN RHODESIA

Proportion of Children who have Never been to School by Year of Birth and Type of Area

Year Of Birth	BOYS				GIRLS			
	All Areas	African Rural Areas	European Farming Areas	Urban Areas	All Areas	African Rural Areas	European Farming Areas	Urban Areas
1956	76.3	76.4	81.5	65.6	78.2	77.4	85.0	70.5

Source: Final Report of the April/May 1962 Census of Africans in Southern Rhodesia. Central Statistics Office, Salisbury, Southern Rhodesia.

(where it is usual for the child to carry out farming during part of the period he might spend in primary school) commences school, he is likely after remaining there for a year or so to leave for agricultural duties. He may eventually return to the school system, but his level of re-entry may raise a number of problems. Educationally he may have regressed and therefore need to repeat grades. By doing this he will contribute to the increase in age range in the lower grades. The consequent increase in the range of emotional development and experience will raise problems for the teacher. If the child continues from the point where he left there will be a discrepancy between him and some of the other pupils with regard to educational attainment. The third possibility, which assumes a theoretical relationship between age and grade, is that he will enter a grade appropriate for his age. In this case there will be a large discrepancy between him and his peers in terms of education which, apart from the problems for the teacher, may tend to increase his chances of repetition in future years, and also his chances of dropping-out of the school system for good. It is also important to recognise that high drop-out rate in rural areas may be due, as in the case of Colombia, to the fact that some rural areas may only have two-grade schools available. Thus, children are forced to drop-out at the end of the second year or transfer to urban schools. The problem is seen again in the following data.

In Iran 30% of the population live in urban areas. The official enrolment in 1961-62 in urban schools was 950,000 out of a total of 1,554,000, i.e. 61%. Over the whole area, rural and urban enrolment figures are about 34%, which indicates that enrolment is much better in urban than in rural areas. In Morocco 80% of males and 28% of females between the ages of 10 - 19 years in urban areas are enrolled in primary education. The corresponding figures for rural areas are 29% for males and 3% for females. Thus, enrolment is not only poor in rural compared with urban areas, but ratio of female to male is much worse. In El Salvador the figures for urban and rural enrolment discrepancy are similar to the above It is important to recognise, however, that the data (see Table 14) are not free from error, since transfers from rural to urban schools as children get older are not identified. It will be seen that drop-out and/or repetition was very much higher in rural than in urban areas (compare grades 1 and 2). A comparison of the enrolment in grade 3, 1964 with those in grade 2, 1963 shows an increase in numbers for urban and a large drop-out for rural areas. This may be partly due to transfer of pupils from rural to urban areas, or re-enrolment of children who left some while ago in urban areas. Whatever the interpretation the data suggest some of the difficulties of assessing rural and urban enrolment separately. (See Table 10 for Bechuanaland and Table 14 for El Salvador primary school classes).

Table 14

EL SALVADOR

Primary Education: Enrolment in Urban and Rural Areas, 1963-1964

	URBAN			RURAL		
Grade	1	2	3	1	2	3
1963 (Oct.)	58.558	41.845	-	62.770	27,299	
1964 (Feb.)	-	49,293	45,035	-	28,579	13,236
% of preceding grade in previous year	-	84	108	-	46	49

Source: Educational Priority Projects for Development. El Salvador. Unesco, 1965.

The differences between wastage in urban and rural areas is also seen in data obtained for the Philippines. Below is indicated the holding power (i.e. the number of pupils remaining in grade 6 compared with grade 1) of elementary schools in the Philippines.

Manila - holding power is approximately 83% at grade 6;
Quezon - holding power is approximately 87% at grade 6;
Naga - holding power is approximately 62% at grade 6;
Legazpi - holding power is approximately 41% at grade 6.

It is of interest that the cities nearest to and including the capital have the highest retention rate, while those further away show greater wastage, although all these cities are on the main island. On the island of Mindanao, which appears less highly populated and less industrialised, the figures for retention in the same year between grades 1 and 6 are: Butuan, 44.39%; Iligan, 42.5%; Cagayan de Or, 63.4% and Davao, 51.4%.

These data perhaps suggest some of the complexities involved in wastage, for where there is high density of population, where urbanisation has developed and where there is considerable industry, there is likely to be the most highly developed and efficient school systems. It seems possible that major cities tend to attract the best teachers. These geographical differences in wastage can be seen quite clearly in Table 15. The holding rate in grade 6 over the Philippines as a whole is 44.7%, whereas in Manila the holding power is 80.2%. Apart from the fact that this is a highly industrialised area where there is a large concentration of the population, the education is free at secondary level and therefore it is possible that many parents transfer enrolment of their children from rural areas to Manila elementary schools. This is perhaps supported by the fact that grade 2 in 1955-56 shows an increase instead of a decrease in enrolment over grade 1. A graph showing the variations in retention rate in different areas is shown in Figure 66.

Some of the studies on wastage have been particularly concerned with socio-economic variables. It may be of value to look at examples of these studies in some detail.

In India, caste is perhaps one of the most important socio-economic variables, since in general it summarises the sociological facts about an individual. Table 16 has been constructed on the basis of material in the Satara Report (Dandekar, 1952).

TABLE 15—*School Retention Rates of the Same Pupils Enrolled in Grade I in 1954–1955 to Grade VI in 1959–1960 in the Public Schools by Region and by Province in the Philippines*

Region/Province	Grade I 1954–1955		Grade II 1955–1956		Grade III 1956–1957		Grade IV 1957–1958		Grade V 1958–1959		Grade VI 1959–1960	
	Enrollment	Percent	Enrollment	Percent	Enrollment	Percent	Enrollment	Percent	Enrollment	Percent	Enrollment	Percent
Philippines	803,161	100.0	661,959	82.4	619,785	77.2	547,344	68.1	436,227	54.3	359,218	44.7
Region I.—Metropolitan Manila[1]	22,929	100.0	23,062	100.6	22,473	98.0	21,963	95.8	20,351	88.8	18,400	80.2
1. Manila	22,929	100.0	23,062	100.6	22,473	98.0	21,963	95.8	20,351	88.8	18,400	80.2
Region II.—Ilocos-Mountain Province	40,846	100.0	33,114	81.1	31,285	76.6	28,786	70.5	24,584	60.2	21,118	51.7
1. Abra	4,034	100.0	3,133	77.7	2,813	69.7	2,555	63.3	2,261	56.0	1,954	48.4
2. Ilocos Norte	8,768	100.0	7,521	85.8	7,204	82.2	6,637	75.7	5,825	66.4	5,111	58.3
3. Ilocos Sur	8,828	100.0	7,862	89.1	7,572	85.8	6,930	78.5	6,121	69.3	5,099	57.8
4. La Union	6,387	100.0	6,049	94.7	6,026	94.3	5,637	88.3	4,708	73.7	4,161	65.1
5. Mountain Province	12,829	100.0	8,549	66.6	7,670	59.8	7,027	54.8	5,669	44.2	4,793	37.4
Region III.—Cagayan Valley-Batanes	28,480	100.0	24,280	85.3	22,901	80.4	20,822	73.1	16,531	58.0	13,696	48.1
1. Batanes	415	100.0	374	90.1	363	87.5	376	90.6	324	78.1	349	84.1
2. Cagayan	10,687	100.0	9,448	88.4	8,926	83.5	7,939	74.3	6,464	60.5	5,324	49.8
3. Isabela	14,243	100.0	11,573	81.3	10,866	76.3	10,030	70.4	7,568	53.1	6,100	42.8
4. Nueva Viscaya	3,135	100.0	2,885	92.0	2,746	87.6	2,477	79.0	2,175	69.4	1,923	61.3
Region IV.—Central Luzon	106,642	100.0	95,033	89.1	92,947	87.2	85,967	80.6	71,186	66.8	59,618	55.9
1. Bataan	4,279	100.0	3,787	87.8	3,709	86.7	3,329	77.8	2,707	63.3	2,210	51.[illegible]
2. Bulacan	16,665	100.0	14,398	86.1	13,920	83.5	12,567	75.4	10,236	61.4	8,770	52.6
3. Nueva Ecija	12,108	100.0	11,971	98.9	11,787	97.3	10,876	89.8	8,290	68.5	6,707	55.4
4. Pampanga	[illegible]108	100.0	18,540	81.6	17,291	78.9	16,245	74.1	13,125	59.9	10,785	49.2
5. Pangasinan	[illegible]64	100.0	28,560	92.2	29,275	94.5	27,416	88.5	23,993	77.5	20,419	65.9
6. Tarlac	14,[illegible]	100.0	12,148	[illegible]	11,411	79.9	10,264	71.9	8,033	56.3	6,593	46.2
7. Zambales	6,4[illegible]	100.0	5,679	[illegible]	5,554	86.3	5,270	81.9	4,802	74.6	4,134	64.3
Region V.—Southern Luzon	107,195	100.0	96,700	90.2	94,503	88.2	87,187	81.3	73,589	68.6	63,797	59.5
1. Batangas	21,648	100.0	19,339	89.3	18,453	85.2	16,421	75.9	13,022	60.2	11,129	51.4
2. Cavite	10,805	100.0	9,823	90.9	9,355	86.6	8,859	82.0	7,566	70.0	6,606	61.1
3. Laguna	11,710	100.0	10,908	93.2	11,045	94.3	10,357	88.4	8,530	72.8	7,393	63.1
4. Marinduque	3,858	100.0	3,358	87.0	3,220	83.5	2,936	76.1	2,199	57.0	1,831	47.5
5. Occidental Mindoro	2,584	100.0	2,152	81.9	2,090	82.5	1,879	74.2	1,562	61.6	1,258	49.6
6. Oriental Mindoro	7,058	100.0	5,885	83.4	5,806	82.3	4,985	70.6	3,890	55.1	3,211	45.5
7. Palawan	4,152	100.0	3,684	88.7	3,567	84.5	2,943	70.9	2,382	57.4	1,950	47.0
8. Quezon	18,049	100.0	15,724	87.1	15,090	83.6	13,896	77.0	11,217	62.1	9,334	51.7
9. Rizal	27,381	100.0	25,827	91.8	25,937	94.7	24,911	91.0	23,221	84.8	21,083	77.0
Region VI.—Bicol	77,878	100.0	64,119	82.3	63,034	80.9	54,528	70.0	43,650	56.0	35,196	45.2
1. Albay	16,400	100.0	14,750	89.9	14,100	86.0	12,464	76.0	10,693	65.2	8,642	52.7
2. Camarines Norte	5,177	100.0	4,796	92.6	4,899	94.6	4,423	85.4	3,872	74.8	3,325	64.2
3. Camarines Sur	23,884	100.0	19,922	83.4	19,558	81.9	17,009	71.2	13,344	55.9	11,062	46.3
4. Catanduanes	4,050	100.0	3,806	94.0	3,860	95.3	3,605	89.0	3,159	78.0	2,636	65.1
5. Masbate	14,202	100.0	9,073	63.9	9,706	68.3	7,387	52.0	5,268	37.1	3,973	28.0
6. Sorsogon	14,165	100.0	11,772	83.0	10,912	77.0	9,640	68.1	7,314	51.6	5,559	39.2
Region VII—Western Visayas	128,975	100.0	100,172	77.7	91,356	70.8	78,576	60.9	57,633	44.7	45,993	35.7
1. Aklan[2]	---	---	---	---	---	---	---	---	---	---	---	---
2. Antique	9,799	100.0	7,580	77.4	6,927	70.7	6,708	68.5	4,829	49.3	3,739	38.1
3. Capiz	23,737	100.0	18,180	76.6	16,355	68.9	13,169	55.5	9,562	40.2	7,269	30.6
4. Iloilo	34,553	100.0	27,834	80.6	26,393	76.4	24,691	71.5	18,684	54.1	15,330	44.4
5. Negros Occidental	37,531	100.0	29,268	78.0	25,974	69.2	21,470	57.2	15,856	42.2	12,791	34.1
6. Negros Oriental	18,278	100.0	13,167	72.0	11,808	64.6	9,200	50.3	6,042	33.1	4,683	25.6
7. Romblon	5,077	100.0	4,143	81.6	3,899	76.8	3,338	65.7	2,670	52.6	2,182	43.0
Region VIII—Eastern Visayas	141,014	100.0	110,337	78.2	98,348	69.7	81,391	57.7	58,599	41.6	45,232	32.1
1. Bohol	20,193	100.0	16,828	83.3	15,619	77.3	12,776	63.3	9,139	45.3	7,025	35.9
2. Cebu	44,785	100.0	35,180	78.6	31,093	69.4	25,927	57.9	18,004	40.2	14,115	31.5
3. Leyte	45,931	100.0	34,002	74.0	29,708	64.7	23,929	52.1	18,327	39.9	13,855	30.2
4. Samar	30,105	100.0	24,327	80.8	21,928	72.8	18,759	62.3	13,135	43.6	10,237	34.0
Region IX.—Southwestern Mindanao and Sulu	85,575	100.0	66,953	78.2	60,592	70.8	52,529	61.4	42,541	49.7	34,611	40.4
1. Cotabato	21,656	100.0	18,171	83.9	16,877	77.9	15,192	70.2	13,525	62.5	11,394	52.6
2. Davao	24,306	100.0	19,947	82.1	18,853	77.6	16,558	68.1	13,471	55.4	10,752	44.2
3. Sulu	11,505	100.0	7,602	66.1	5,966	51.9	4,677	40.7	3,098	26.9	2,531	22.0
4. Zamboanga del Norte	10,729	100.0	7,915	73.8	6,678	62.2	5,499	51.3	4,567	42.6	3,611	33.7
5. Zamboanga del Sur	17,379	100.0	13,318	76.6	12,218	70.3	10,603	61.0	7,880	45.3	6,323	36.4
Region X.—Northeastern Mindanao	63,627	100.0	48,189	75.7	42,346	66.6	35,595	55.9	27,563	43.3	21,554	33.9
1. Agusan	7,605	100.0	5,646	74.2	5,442	71.6	4,949	65.1	3,750	49.3	2,944	38.7
2. Bukidnon	4,313	100.0	3,220	74.7	3,199	74.2	2,711	62.9	2,347	54.4	1,938	44.9
3. Lanao del Norte 4. Lanao del Sur	15,953	100.0	11,488	72.0	7,874	49.4	6,141	38.5	4,299	26.9	3,328	20.9
5. Misamis Occidental	9,669	100.0	7,448	77.0	6,767	70.0	5,753	59.5	4,538	46.9	3,381	35.0
6. Misamis Oriental	11,879	100.0	9,493	79.9	8,969	75.5	7,778	65.5	6,118	51.5	5,057	42.6
7. Surigao	14,208	100.0	10,894	76.7	10,095	71.1	8,263	58.2	6,511	45.8	4,906	34.5

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[1] Enrollments in Quezon City, Pasay City, Caloocan, Makati, Mandaluyong, Parañaque, and San Juan are included in the Province of Rizal.

[2] Enrollment included in the Province of Capis.

SOURCE OF BASIC DATA: Bureau of Public Schools (Office Records from the Research and Evaluation Division).

Table 16

SATARA, INDIA

Percentage Distribution of "Drop-out" and Repetition Cases among Principal Castes

Caste	"Drop-out" Cases	Repetition Cases	Ratio of Repetition Percent to Drop-out Percent
Literate/Professional Groups	0.84	3.09	3.68
Cultivating and Artisan Groups	2.52	2.77	1.37
	55.58	62.73	1.13
	5.96	6.80	1.14
	8.16	9.26	1.13
Lower Rural and Nomadic Groups	11.53	7.12	0.62
	7.42	4.98	0.67
	4.16	1.93	0.48
	4.33	1.27	0.29

Source: Adapted from Table 60 of Report of an Investigation into Wastage and Stagnation in Primary Education (Satara District).

There are essentially three social categories which for simplicity may be summarised as follows:

1. children whose parents are literate and/or professional;
2. children whose parents make up the bulk of the rural population and include the cultivating and artisan castes;
3. the group regarded as the lowest stratum of rural society.

Included in this group are the nomadic, sheep and goat minding castes. The report suggests that in the first group repetition is much more common than drop-out. In the second group the two factors are fairly evenly matched, while in the third group drop-out is very much higher than repetition. The more educated the parents, therefore, and the higher their standing economically in society, the more likely they are to keep their children at school even though the children are unsuccessful and are not promoted. In groups where the parents themselves have had little education they may tolerate drop-out amongst their children. This may indicate the need for directing educational measures towards adults and for specially trained officers to decrease wastage rates by means of social work with parents.

Table 17 shows income distribution of parents in relation to percent drop-out and repetition in children. It reinforces the observations made earlier, for repetition is much more common than drop-out amongst those who have relatively high incomes, though the reverse is true of those with low incomes.

It is probably worth spending some time examining the association between parental occupation and educational wastage. In Table 18 occupations are divided into five groups. Percentage of drop-out is more frequent than repetition among artisans and casual labour. In business and salaried employment, and in agricultural work the reverse is true. Unfortunately these tables only represent percentages and it is not clear whether such differences are statistically significant. Nevertheless they reflect a tendency in the data. It cannot be said that occupation and drop-out/repetition are causally related since there are other factors that are associated with these various occupations which may be of over-riding importance. For example, business employment is likely to be associated with urban areas. Such areas are likely to have a high school density compared with rural areas, and presumably travelling distances are relatively short and transport relatively good. However, it is probably of some importance that size of small-holding is also relevant. Drop-out is greater than repetition amongst the children of those farming small areas of land, while those cultivating more than five acres have greater repetition than drop-out. It would appear

Table 17

SATARA, INDIA

Income Distribution of Drop-out and Repetition Cases in Percents.

Income in Rs.	Drop-out Cases	Repetition Cases	Ratio of Repetition Percent to Drop-out Percent
50	6.97	2.80	0.40
100	11.33	7.07	0.62
150	8.74	7.26	0.83
200	14.64	11.98	0.82
250	7.69	8.44	1.10
300	13.43	13.52	1.01
400	14.00	14.98	1.07
500	9.06	13.80	1.52
1,000	12.62	16.70	1.32
1,000 +	1.54	3.45	2.24
	100.00	100.00	
Total Cases	1,778.00	1,264.00	

Source: Adapted from Table 61 of Report of an Investigation into Wastage and Stagnation in Primary Education (Satara District).

Table 18

SATARA, INDIA

Distribution of Drop-Out and Repetition Cases According to Occupation of the Guardian (Percentages)

Occupation	Drop-out per 100 wastage cases	Repetition per 100 wastage cases
Agriculture	47.02	55.30
Artisans and Balutedars	20.90	17.97
Casual Labour	18.37	13.61
Business and Salaried Employment	6.85	10.11
Others	6.86	5.01
	100.00	100.00

Source: Report of an Investigation into Wastage and Stagnation in Primary Education. Poona, 1952.

therefore that economic level is an important variable in determining wastage levels. These results are supported by the material collected by the National Survey Committee on Drop-out in the Philippines. It was estimated that economic factors accounted for 38% of drop-outs. The annual income of the families of wastage cases was very low, 85% of them receiving less than the lowest basic wage rate. Allied to economic conditions was the standard of the home; 'poor home' conditions were thought to account for about 15% of drop-outs.

Table 19 presents the reasons for drop-out as given by teachers in the Satara District. This shows that migration to another place accounted for 18% drop-out and 3% repetition, though it is not entirely clear whether this data was obtained by follow-up studies outside the district. Presumably migration may result in transfer which may be associated with repeating grades at schools outside the district. In addition some pupils may be involved in short-term migration in search of work, and then return to school. They may be likely to repeat a grade because they have lost a considerable amount of schooling. 7% of drop-out was thought to be due to employment on the family farm, and a further 29% due to tending cattle. Indeed it can be seen from this table that employment in some form or other seems to account for a very large degree of wastage and repetition.

A considerable degree of repetition, however, was also thought to be caused by intellectual subnormality. The dangers of accepting teachers' estimations of causes of wastage can be illustrated by the use made of this "factor" in wastage studies. It is not indicated how intellectual subnormality was assessed. Low functioning level may result from a large number of factors including home and social environment, motivation and educational opportunity (Clarke & Clarke, 1965). To accept intellectual subnormality as a determinant of wastage may simply result in glossing over the major causes. In its more pernicious form the use of the 'subnormality syndrome' may result in the exclusion of children from a school system although they are capable of benefitting from education. (e.g. Britain prior to World Warr II).

The material in the Satara Report referred to migration. It seems that this may be an important factor because, firstly, it may result in genuine wastage and secondly, in a number of cases, may affect enrolment statistics in such a manner that wastage is inferred, whereas in actual fact large amounts of transfer are involved. An example of large scale migration is seen in the population statistics for copper belt urban areas in Northern Rhodesia. Figure 67 shows a large population of very young children in these areas. However, the number of children decreases steadily with rise in chronological age. The loss of children appears to be essentially associated with migration resulting from the limited and intermittent urban employment prospects of their fathers. Many

Table 19

SATARA, INDIA

Reasons put Forward by Teachers for "Drop-out" and Repetition

Reason	"Drop-out" cases Percentages	Repetition cases Percentages
Migrated to other place	18.67	3.01
Employed on the family farm	13.44	7.31
Employed in the non-agricultural occupations of the family	7.26	6.88
Seeks casual employment in the village	4.67	1.11
Tends the cattle or sheep and goat of the family	29.25	41.14
Truancy	1.41	3.09
Intellectually subnormal	1.46	10.36
Other causes	23.84	26.50
TOTAL	100.00	100.00

Source: Report of an Investigation into Wastage and Stagnation in Primary Education. Poona, 1952.

parents return from urban areas to village life when employment ceases (Irvine, 1961). In this particular instance economic considerations appear to affect wastage in urban areas. Indeed many, if not most, of these children drop-out of the school system. It should be remembered that transfer would be another possibility, though without adequate communication between families and attendance officers it seems debatable whether transfer, even where class places are available, would automatically follow.

A number of other factors would, on subjective grounds, seem worthy examining as causal elements in wastage, e.g. a) ability level; b) language comprehension and speech; c) physical health; d) the distance travelled by the child to school; e) child and parental attitude toward schooling; f) irregularity of attendance. (For further general discussion of these and other factors see Wall (1952), Wall, Schonell & Olson (1962).

Such variables have been examined in a number of countries and figures that are available have been collected in a variety of ways; for example, by asking teachers to list the causes of wastage, as in a study from Thailand (1961), by asking both pupils and teachers to enumerate, rank and identify in other ways wastage causes, and by administering objective tests (Calderon, 1956). Much of the work carried out to date is descriptive of multiple factors possibly involved in wastage. It should not be assumed that these are in themselves causes. For example, irregularity of attendance is quoted in the Thailand study as a cause of wastage. It seems possible that irregularity of attendance may be associated with a high drop-out rate, but it does not necessarily mean it is the cause of it. Both may be the result of other variables, for example, long distances between home and school, or the attitude of the child to school.

A further example from Uganda (1963) suggests the multiplicity of causes of wastage in primary education. The following causes have been put forward:. the cost of school fees, especially for large families; broken homes in which parental supervision is absent; the ignorance of parents as yet unconvinced of the value of education; temporary or permanent withdrawal of children to work on the shamba or with cattle; fatigue following long journeys to school; prolonged sickness due to parental negligence or inadequate medical care; boredom of over-age pupils; lack of co-operation between parents and teachers often due to the inability of over-worked teachers to make the necessary contact with the pupils' homes. There also appear to be particular causes affecting girls, such as withdrawal for home duties; desire of parents for their daughters' early marriage; dislike of schools; fear of unsupervised journeys to school; inferior status of women and girls whose education is not regarded as important. The percentage of girls attending school is lower than that of boys throughout the grades. Moreover, the percentage of girls enrolling gradually decreases with increase in grade level. For example, only 39.4% of primary grade 1 enrolments are female and only 24.1% of primary grade 6 enrolments.

In order to examine some of the above factors scientifically it would be necessary to design controlled studies so that single variables could be investigated while holding other factors constant. If is, of course, possible to examine the number of variables within any one study and suitable experimental designs, together with appropriate statistical techniques are to be found in the literature (Roller, 1963, Winer, 1962). It is not proposed to set up models of this kind in the present report, and readers are referred to the 1961 Bangkok Conference for an expansion of this subject.

It is now proposed to consider in detail some illustrative studies of causes of wastage. The first study concerns wastage in secondary schools (A Study of Students' Failure in the Public Secondary Schools of Manila. Calderon, 1956). Although the data are not directly related to the present report they do illustrate various aspects of wastage. In this study students were selected who had failed examinations in at least one subject in a particular year, but had returned to school. (The investigation would have been improved by obtaining data from successful students as a basis for comparison). A questionnaire was given to 527 students, another questionnaire was given to teachers and objective tests were also used.

The questionnaire given to students was divided into eight sections. The first part was concerned with personal information such as name, home address, date and place of birth, details of parents and their occupations. They were also asked to state the languages spoken at home, the number of years taken to finish elementary education, their favourite subject and their most disliked subject. Part two was concerned with health and health habits, and included questions on symptoms, diseases and handicaps. Part three dealt with study habits, e.g. time spent on work, attitudes to work, distraction, fatigue, classroom behaviour. Part four was concerned with questions relating to reading deficiencies, while part five dealt with school organisation and administration. Part six examined various aspects of the teacher as seen by the student, part seven, items concerned with out-of-school environment and part eight a variety of other items suspected to be associated with failure.

The teachers' questionnaire required description of the teachers' roles and experience. Teachers were asked to give details on the physical condition of the child, study habits and classroom behaviour, reading deficiencies and factors associated with school organisation, teachers and administrators. The teacher was also given a list of causes of failure and asked to tick those items for each student which he considered relevant. In other words, for every school failure there was an appropriate form.

The objective test consisted of an intelligence and a reading test. The intelligence test included items on information, analogy, vocabulary, reasoning and arithmetic. Reading attainment was assessed by the Iowa Silent Reading Test. This included a number of sub-tests, i.e. rate and comprehension of reading, directed reading, poetry comprehension, word meanings for science, mathematics and social science, sentence meaning, paragraph comprehension, and finally location of information.

The causes of secondary school students' examination failure as reported by the teachers can be seen in Table 20. It should be borne in mind that the causes listed here cannot necessarily be generalised to primary education, since it is possible that a large number of children who do not reach secondary education have dropped-out for other reasons. Nevertheless they may give some useful leads. It cannot be assumed, as suggested in the Philippine study, that the items selected by the teachers are necessarily the causes of failure. They may, in fact, be statistically associated with failure, but may have no causal relationship with it. For example, irregular attendance may not cause failure, but failure and irregular attendance may be due to other problems such as difficulties in language comprehension. However, it is of interest that a number of the items listed here as causes of repetition are also observed in the teahers' estimations of the causes of elementary school failure in the Thai study (see Table 21). For example, irregular attendance and language difficulties are prominent in both these studies, and aspects of low achievement are also suggested as major causes of wastage or failure.

Causes of failure as estimated by the Manila students are to be found in Table 22. Again language difficulties in the form of language comprehension and reading received prominent ratings. The objective test results show that those students who failed had reading ages below the standard for their grade, and intelligence test results suggest that a large number of them were of low intelligence. It cannot be concluded, however, that low intelligence is a cause of failure, neither is this hypothesis excluded. It should be pointed out that children who return low scores on a verbal test of intelligence may be obtaining them partly because of limited verbal experience, which may result from irregular attendance, etc.; they are not necessarily of low cognitive ability. In other words, it is likely that low scores may occur for a number of reasons, some of which may cause failure.

Table 20

PHILIPPINES

Causes of Secondary School Students' Failure in the City of Manila as Reported by Teachers, 1949-50.

	Cause	Rank	Number	Percentage
1.	Financial handicap in his studies	1	389	73.81
2.	Rarely study the lesson	2	306	58.06
3.	Failure to comprehend the meaning of words and sentences	3	261	49.53
4.	Failure to complete assignments, hand in projects, themes, homework etc.	4	252	47.82
5.	Lack of interest and attention	5	244	46.30
6.	Language difficulties -- inadequate understanding of English	6	234	44.40
7.	Learns very slowly	7	219	41.56
8.	Irregular attendance due to truancy	8	189	35.36
9.	Insufficient textbooks, references our outside reading material in school	9	186	35.29
10.	Do not tak[illegible]wn important notes in the classroom	10	184	34.91
11.	Find difficulty in locating sources of information in books and magazines	11	175	33.21
12.	Subject matter too hard to grasp	12	158	29.98
13.	Afraid to participate in class discussion	13	153	29.03
14.	Do not keep notes in a notebook	14	143	27.13
15.	Failure to get the pattern of the author's thought in an entire passage	15	122	23.15
16.	Excessive dependence on classmates	16	114	21.63
17.	Poor home conditions not conductive to study	17	112	21.25
18.	Inappropriate rate of reading which may be caused by too slow comprehension or too critical evaluation of the material read	18	108	20.49
19.	Lack of ability to phrase properly in oral reading	19	100	18.98
20.	Standard of promotion of previous grade was very low	20	91	17.27
21.	School has no definite plan of counselling weak students	21	90	17.08

Table 20 cont.

	Cause	Rank	Number	Percentage
22.	Studies only the subjects he is interested in	22	84	15.94
23.	Lack of confidence	23	82	15.56
24.	Language of the book too hard for the student	24	80	15.18
25.	Often sick	25	76	14.42
26.	Too many students in class	26	70	13.28
27.	Failure to give extra help to weak students	27	61	11.54
28.	Much work at home	28	60	11.39
29.	Does not belong to the right section	29	58	11.01
30.	Non-cooperation of parents	30	45	8.54
31.	Too many social activities	31	43	8.16
32.	Over confident	32	40	7.59
33.	Inadequate and lax attendance enforcement	33	39	7.40
34.	School has no close contact with parents	34.5	33	6.26
35.	Emotional disturbance	34.5	33	6.26
36.	Unregulated athletic and social programs	36	32	6.07
37.	Other physical defects like adenoid, asthma, hookworm etc.	37	29	5.50
38.	Sick for a long time	38	27	5.12
39.	Strict promotion policy	39	22	4.17
40.	Defective vision	40	14	2.65
41.	Employed in off-hours	41	12	2.27
42.	Poorly adapted admission policy of the school	42.5	11	2.08
43.	Defective hearing	42.5	11	2.08
44.	Irregular attendance	44.5	3	0.57
45.	Stubborness	44.5	3	0.57
46.	Pure laziness	46.5	1	0.19
47.	Indifferent attitude	46.5	1	0.19

Source: A Study of the Students' Failure in the Public Secondary Schools of Manila. B.F. Calderon.

Table 21

THAILAND

Number of Repeaters, by Causative Factors of Failure

(as estimated by teachers)

Educational Region	All factors of failure	Irregular Attendance			Illness			Mental i.e. achievement			Emoti
		Number	Percent	Rank	Number	Percent	Rank	Number	Percent	Rank	Numbe
1	46,750	14,977	32.04	1	7,585	16.22	3	9,454	20.22	2	4,39
2	35,511	8,059	22.69	2	4,587	12.92	3	3,218	9.06	5	2,05
3	64,756	22,552	34.82	1	12,666	19.56	2	11,647	17.99	3	2,94
4	26,921	7,030	26.11	1	4,786	17.78	3	4,536	16.85	4	2,73
5	47,217	13,845	29.32	1	8,860	18.76	2	8,255	17.48	3	4,01
6	38,938	11,428	29.35	1	7,262	18.65	3	7,577	19.46	2	3,89
7	95,321	33,269	34.90	1	21,220	22.26	2	15,571	16.33	3	5,62
8	101,694	27,171	28.72	1	23,698	23.30	2	17,483	17.19	3	7,16
9	59,926	16,997	28.36	1	12,030	20.07	3	13,892	23.18	2	4,96
10	54,175	10,453	19.29	3	11,624	21.45	2	14,038	25.91	1	4,43
11	93,780	27,794	29.64	1	15,438	16.46	4	18,954	20.21	2	4,99
12	40,574	13,260	32.68	1	7,615	18.77	2	7,300	17.99	3	2,53
The Total Region	705,563	206,835	29.31		137,371	19.47		131,925	18.69		49,76

Source: **Thailand, Department of Elementary Education. Annual Report, 1961. (Adapted)**

ure (Grades 1 - 4)

otional and Social			Language Difficulty			Other Factors		
ber	Percent	Rank	Number	Percent	Rank	Number	Percent	Rank
,390	8.39	5	5,992	12.82	4	4,352	9.31	6
,059	3.80	6	13,860	39.03	1	3,728	10.50	4
,948	4.35	6	9,947	15.36	4	4,996	7.71	5
,736	10.16	5	5,362	19.92	2	2,471	9.18	6
,016	8.50	6	6,685	14.16	4	5,556	11.77	5
,897	10.01	5	4,940	12.69	4	3,834	9.85	6
,623	5.90	6	13,543	14.21	4	6,095	6.39	5
,167	7.05	6	17,323	17.03	4	8,852	8.70	5
,968	8.29	5	8,361	13.95	4	3,678	6.14	6
,430	8.18	6	7,775	14.35	4	5,855	10.81	5
,996	5.33	6	17,744	18.92	3	8,854	9.44	5
,533	6.24	6	6,581	16.22	4	3,285	8.10	5
.763	7.05		118,113	16.74		61,556	8.72	

Table 22

PHILIPPINES

Summary of the Causes of Failure Given by Students who Failed in the Public City High Schools of Manila, April 1950

	Cause	Percentage
1.	Difficulty in comprehending the meaning of words and sentences	76.71
2.	Financially handicapped in studies	75.90
3.	Too much work at home	68.07
4.	Feel that they should be in a lower section	67.19
5.	Teachers are over-worked	66.40
6.	Difficulty in getting the patterns of the author's thought in an entire passage	65.09
7.	Difficulty in interpretation, comparison, analysis and critical evaluation of the materials read	62.16
8.	Subject matter is difficult	61.79
9.	Inappropriate rate of reading	59.88
10.	Do not talk to their teachers after class when they have troubles in the subject	58.20
11.	Lack of ability to phrase properly in oral reading	57.85
12.	Difficulty in locating sources of information in books and magazines	56.59
13.	Nervous and afraid when participating in classroom discussions	53.59
14.	Meager provisions of reading materials	52.75
15.	Frequently getting up while studying	51.57
16.	Schools do not have a definite plan of counselling students	51.53
17.	Allow interruptions before completing a lesson	51.50
18.	Work not submitted on time	50.94
19.	Goes to parties often	50.32
20.	Do not feel that they spend much time in studying	50.80
21.	Do not have enough suitable reading material at home	50.38
22.	Lack of ability to pronounce words correctly	49.80
23.	Feel incapable of doing the work	49.49
24.	Teachers are unfair in grading	49.30

Table 22 (cont.)

Cause	Percentage
25. Have trouble settling down at the beginning of the study period	48.81
26. Do not offer themselves when teachers call for volunteers	46.90
27. Do not ask questions when they do not understand something that has been explained	44.60
28. Parents and other persons help students in their studies	44.31
29. Often have family troubles	43.72
30. Teachers are not flexible and resourceful in meeting indib individual needs and in encouraging pupil's growth	43.62
31. Teachers do not have full use of school and community resources in helping pupils	43.60
32. Irregular class attendance	42.70
33. Headache after reading	41.55
34. Do not participate in classroom activities	41.50
35. Do not write much and fast during a lecture	41.23
36. Do not immediately go on to the next class when they have completed their work	41.06
37. Day-dreams in class in place of studying	38.49
38. Sits down to study and finds he has no notebooks, textbooks, and other materials	38.26
39. Does not take down important notes in the classroom	38.07
40. Get tense or nervous while studying	37.21
41. Teachers are not generous in giving extra help	37.08
42. Does not keep notes in a notebook	36.81
43. Whispers to other students while the teacher is lecturing or leading a discussion	36.54
44. Work interferes with lessons	33.73
45. Neighbours are mostly rich people	32.82
46. Teachers do not show interest and initiative in learning pupils individually	32.74
47. Teachers do not help students solve their personal problems	32.12
48. Frequent continuous colds	31.88
49. No specific place to study	29.12
50. Irregular sleep	28.84
51. Dizziness	28.46

Table 22 (cont.)

	Cause	Percentage
52.	Teachers are unsympathetic, unkindly and impatient	28.35
53.	Unregulated athletic and social programmes	27.56
54.	Teachers do not give a fair chance to the students	27.56
55.	Teachers do not encourage pupils to communicate freely and discuss their plans	27.42
56.	Poor appetite	27.32
57.	Teachers do not make friends with pupils	27.22
58.	Schools do not have close contact with parents	27.15
59.	Schools do not have adequate admission policy	26.60
60.	Employed after school hours	25.36
61.	Frequent eating between meals	24.48
62.	Pain in the eyes	23.91
63.	Teachers do not have confidence in and respect for pupils	23.68
64.	Irregular or omitted meals	23.53
65.	Teachers do not respect pupils' opinion	23.20
66.	Difficulty in seeing clearly at a distance	22.58
67.	Heavy coffee drinking	21.63
68.	Schools have inadequate attendance enforcement	21.25
69.	School environment is not attractive	21.02
70.	Marked forgetfulness	20.49
71.	Watering of the eyes	18.98
72.	Blurring or moving letters when reading	18.41
73.	Teachers do not know the subject	15.90
74.	Teachers do not explain the lesson and assignment clearly	15.73

Source: A Study of the Students' Failure in the Public Secondary Schools of Manila. B.F. Calderon.

Another aspect of failure at secondary level is seen in Table 23. It indicates that children who fail their examinations are, on the average, over-age for their grade. For example, in the first year of secondary education 98% of the failures are over-age, whereas only 2% are the correct age for the grade. None were under-age. At other grade levels there is a preponderance of over-age children amongst the failures. It would seem therefore that age above the mean for a particular grade is associated with failure in secondary education, and this, if generalised to primary education, would suggest that repetition is likely to be associated with failure possibly eventually in the form of drop-out, and that one way of reducing this is to exclude children of high age. However, it will be recalled that the data from Venezuela (page 76) indicated that repetition is more common amongst young children than children of a greater age, the latter being more likely to drop-out. In addition, data produced in the Satara Report (page 111) showed that generalisations of this nature are dangerous, since many socio-economic factors appear to cut across age-repetition-drop-out tendencies. It is likely that the various factors are of different predictive value in different countries. It is important therefore to examine as many variables as possible.

Another investigation carried out in the Philippines was aimed at investigating the causes of 599,356 drop-outs during the school years 1952-1955 (from National Survey of Drop-out from Elementary Schools 1952-55, National Economic Council, et.al.). The major causes of drop-out are summarised in Table 24. Again it will be noted that these figures are based on opinion and may only be factors associated with drop-out rather than the causes of it. Nevertheless it would appear that there is a general concensus of opinion that these factors are important. Over-reliance on such figures could lead to considerable error. For example, it is estimated that nearly 47% of drop-outs are due to lack of interest in learning. Lack of interest is in itself a complex factor which may be a function of a number of other causes, for example, the long distances children have to travel in order to attend school, poor standards of teaching, levels of education which are above the ceiling of the children's ability, attitude of parents towards schooling, and so on. Indeed, the second factor listed in Table 24, 'could not get required books', may be a cause of lack of interest in learning. Although these figures should be regarded with interest it would be dangerous to assume that they are accurate, and it is suggested that more objective studies are required before any reliable conclusions can be drawn.

Problems associated with wastage

It is perhaps relevant that in countries that have little wastage in terms of drop-out at the elementary school level (in fact, school

Table 23

PHILIPPINES

Number and Percentage of Under-Age, Normal Age and Over-Age Students Who Failed in the City High Schools of Manila 1949-1950

(these pupils returned to school the following year)

Age	Boys	Percent	Girls	Percent	Total	Percent
FIRST YEAR						
Under-age	-	-	-	-	-	-
Normal age	1	2.13	-	-	1	1.92
Over-age	46	97.87	5	100.0	51	98.08
SECOND YEAR						
Under-age	7	7.69	5	11.11	12	8.83
Normal age	14	15.38	7	15.56	21	15.44
Over-age	70	79.93	33	73.33	103	75.73
THIRD YEAR						
Under-age	4	3.0	3	4.05	7	3.38
Normal age	15	11.28	12	16.22	27	13.04
Over-age	114	85.72	59	79.73	173	83.58
FOURTH YEAR						
Under-age	18	5.92	13	7.22	31	5.32
Normal age	44	12.66	33	18.33	77	12.90
Over-age	55	81.48	37	74.45	92	81.78

Source: A Study of the Students' Failure in the Public Secondary Schools of Manila. B.F. Calderon.

Table 24

PHILIPPINES

Causes of Drop-out and Percentages of Drop-outs

(Manila)

Causes	Number of drop-outs caused	Percent drop-out
Lack of interest in learning	281,374	46.94
Could not get required books	61,015	10.18
Distance to travel to school	43,028	7.18
Too old for the class	41,194	6.87
Onerous contributions	37,596	6.27
Did not like the teachers	31,248	5.21
Irregular attendance	24,618	4.11
Influence of bad companions	15,165	2.53
Frequent transfer from school to school	14,037	2.34
Difficulty with English	10,792	1.81
Other factors	39,289	6.56
TOTAL	599,356	100.00

Source: A Study of the Students' Failure in the Public Secondary Schools of Manila. B.F. Calderon.

refusal is regarded as an abnormal condition) there is considerable evidence of problems of learning and education within the school. This can take a variety of forms such as backwardness, specific learning difficulties and social and emotional maladaptation. It seems possible that the reduction of wastage problems may result in a large increase in the type of educational problems referred to above. In other words, a recognition of wastage problems and an attempt to deal with drop-out and repetition by various socio-economic means does not necessarily solved the problems of educational failure. It may therefore be important when seeking improvement in retention rates to recognise the need for remedial education. This is not only necessary among a few children of low ability or bright children with specific learning deficiencies. It may involve a considerable proportion of the school population (Half our Future 1963, Mays, 1962). Although drop-out is not a common problem in such countries (e.g. Great Britain) children in lower socio-economic groups tend to show a complex of education difficulties including poor attendance, physical ill health (which may involve problems in the field of vision and hearing), cognitive difficulties in the verbal sphere and backwardness in the basic subject. (For a fuller description of these particular difficulties see Burt, 1952; Wall, Schonell & Olson, 1962; Bernstein, 1960). Where there are compulsory systems of education or fees are required or there is a limited number of places in the elementary school system, it is possible that the type of child described above will not even enrol, or, if he does he is likely to fail, repeat grades and eventually withdraw from schooling. It has been suggested that when such children are included within the framework of elementary education some form of streaming and, in some cases, special education and remedial services are required (Special Educational Treatment, 1946; Tansley & Gulliford, 1960). This will involve the setting up of specialist units concerned with the diagnosis of conditions relating to such children, and it will necessitate the employment of adequate professional staff, such as psychologists, (The School Psychological Service, 1962; Bulletin of the British Psychological Society, 1963) remedial teachers, and social workers (Adams, 1960) to aleviate the pressure on less privileged groups and attempt to solve the problems facing individual children and their families. The cost of such services may be considerable, but they would appear to be necessary in any system where drop-out and repetition are reduced to a minimum and enrolment of school age population within the country is very high.

Some Means of Combatting Wastage

1. Examinations at year-end

Educational systems vary in the method of promoting children from one class to another. There are a number of reasons for this. Teachers may, on the basis of their experience of the children in class, decide that they are sufficiently educated to pass on to the next stage. This opinion may be expressed in a crude form of rating or ranking which is a reflection of subjective judgments. Another way of making promotion decisions is to set an objective examination. This may include an examination on the curriculum which the children have followed throughout the year, and may also involve assessment of intelligence and reading and arithmetic attainment (Burt, 1950; Schonell, 1945). In many countries as in Britain and the United States, large numbers of tests are available for such purposes. These are standardised on a representative population and have specific reference to particular age groups or grades. From such tests it is possible to estimate the performance of each child relative to that of children of his own age or grade. A standard of performance may then be required for promotion from each grade. Even so local factors may enforce modifications in the pass/fail standard. For example, the number of children accepted for the next grade may be dependent not only on their performance, but on the availability of places. In a number of countries it may not be possible to apply standardised testing techniques simply because these are not available at present. It is suggested that this represents an important area of study not only as a way to combat wastage, but also to enable teachers to learn more about the expectation of performance they can have of their children.

A further method of combatting wastage is automatic promotion of children from one grade to the next. This is the system used in Britain. Often, though not necessarily, children are of the same age within any particular grade, and the average age of children in each succeeding grade of the cohort is one year greater than that for the previous grade. Such a system obviously does away with repetition and it is also likely from what we have seen regarding the association between drop-out and repetition, that such a system would reduce drop-out rates even though compulsory education cannot be enforced. Automatic promotion has other implications for education. If all children are promoted each year then it is supposed that children are either of similar ability, or, if they are of widely different abilities, they can be given education appropriate to their level, streaming being one method of seeking this end. This implies that adequate means of dividing children into different standards are available (Wall, Schonell & Olson, 1962). This may involve the application of specialist services and personnel such as educational psychologists to assess levels of ability as well as attainment. Automatic promotion also suggests, at least, in its most sophisticated form, that there is understanding and assessment of the social conditions in which a child lives, and the needs which have to be met at a physical and psychological level if he is going to become progressively more educated. It may be impossible to develop such a system of education in many countries or in certain districts within a country, for example, the single-class school with one teacher in a rural area.

Any system of education which is concerned with reducing wastage and failure is inevitably faced with the needs of backward children (Burt, 1950). As indicated in an earlier section it may be necessary to provide facilities for streaming children into different classes within the same grade. This implies the setting up of flexible educational programmes to suit the needs of different groups of children. Special classes or remedial groups may be necessary. For example, children who have problems in reading often find difficulties in order educational and social spheres which may be a direct reflection of their reading problems. Children with such problems often respond rapidly to remedial education either individually or in small groups. The use of small groups may not always be possible and other less conventional methods, such as mobile programme learning units, may have to be considered. Furthermore, it should not be assumed that backward children are necessarily of low intelligence or, if low scores are obtained on intelligence tests, that they will necessarily continue to function at below average level (Dearborn & Rothney, 1941). Children fail for a number of reasons and it is therefore necessary to examine the causes of failure. This includes a detailed psychological and physical examination of the child (Wall, Schonell & Olson, 1962). However, there is a tendency in some countries to diagnose a child's problems without making arrangements for remedial action. Obviously lack of co-ordination at this level can be wasteful in both time and money.

It is not the place of this report to examine which of these means of reducing repetition and drop-out are the most desirable. This is something which can only be decided when local conditions have been examined, though it is worth bearing in mind that in any one country it may be desirable to set up different procedures in different areas. For example, it may be possible to apply automatic promotion systems with different levels of education at each year in urban districts, while in other areas some other system of education must be developed, at least as an interim measure.

2. Curriculum studies

The data discussed in this paper leads to the conclusion that a number of curricula studies are required in order to reassess the type of education given at the primary stage. One of the reasons for large drop-out or high repetition rates may be inappropriate standards of education. If it is deemed undesirable to lower standards it may be advisable to consider raising the age of initial enrolment. For example, it may be appropriate to commence education at 8 or 9 years of age instead of 5 years of age. This suggestion would be consistent with some of the data on repetition and age obtained from a number of countries. For example, in some countries the repetition and possibly drop-out of very young children may be greater than that for children who are older, regardless of grade. It is also true that repetition rates are at a peak in the first grades of study (Table 24, Bechuanaland). It is also relevant to ask whether the needs of children at different ages can be met by education in one class taught by the same teacher. There would seem on the face of it an argument for dividing children and adults into different groups, since even if literacy levels are similar, social needs, experience and learning rates may be very different.

3. Attendance Officers

In this report it has been indicated that children's school attendance may benefit from liaison between school and home environments. In some areas particular teachers are responsible for keeping drop-out and repetition figures at a low level. It is suggested that there is evidence to indicate that school welfare officers or teachers seconded for this purpose are highly desirable, and that this service needs to be set up, possibly in the first instance on an experimental basis, in order that the most desirable form of liaison between school and home may be organised.

4. Additional Factors

The above are examples of ways in which wastage may be reduced. However, a number of studies need to be directed towards problems in reading and language comprehension. The importance of such studies have been indicated earlier (see Philippines material, page 125) and are dealt with in some detail in the 1961 Bangkok Conference Report.

Wastage Data - Final Model

The following is a suggested model for the collection of wastage data based on the findings of the report. It is concerned with repetition and drop-out, and also the variations which may be found between different groups of people under a variety of circumstances.

1. Sample

The sample of pupils used for the collection of wastage data may consist of, a) the school age population, b) the school population, c) the total population. It may also be a random sample of any one of these populations. The type of sample selected will partly depend on the problems being investigated. For example, in countries where many children may not be able to obtain elementary education it may be

Table 24

BECHUANALAND

Year of School Course	1	2	3	4	5	6	7
Percentage of children in year required to repeat.	30	19	18	11	11	24	13

(Numbers on which these data are based are not known)

Source: Educational Planning Mission Report. Unesco, 1964.

important to select from the total school age population in order to investigate factors which influence school enrolment. Again, in some countries adults may receive elementary education and therefore it may be appropriate to represent them in any investigation. A further sophistication of method might involve stratification in which sampling would take place within preselected sub-groups. For example, it might be desirable to examine subjects from urban and rural areas, or pupils attending private schools. The type of sample which one uses will depend partly on the data already available, the information one is interested in collecting and also the availability of skilled man-power and resources for carrying out the study. These factors need to be discussed in relation to the size of the area being investigated. It is recommended that if complete school populations cannot be investigated in a scientifically acceptable manner, and this may be the case in many developing countries, sampling should be carried out to take into account the different groups which are available within the country's community. Some of these may be large groups, in which case a very small fraction of that community will be required for investigation. Other groups may be smaller, for example those children attending private schools, and in these cases a relatively larger fraction of the population will be needed, to the extent in some instances of including the total population of a group within the investigation.

2. Collection of data

Enrolment data can be collected directly from schools. It may simply be a matter of obtaining the information from teachers in the schools involved in the study. However, such data may be inaccurate. For example, children who are enrolled do not necessarily attend school. Furthermore, there may be some errors in the enrolment figures themselves. Transfer figures may cause confusion in calculating enrolment figures. It would seem wise, therefore, if enrolment figures are required, to incorporate a reliability check so that some estimate of error can be made. Probably the easiest way of doing this is to have a check on enrolment records by making completely separate recordings of sub-samples of the population involved. Such checks may not be sufficient in view of the complex variations which may occur in different areas and different school systems, and could involve a considerable amount of effort for a very small return. Indeed, it may be more advisable to set up a study involving research officers, who though making use of enrolment data, will make their own collection of data based on the sub-sampling suggested above.

3. Data required

Regardless of the means of collecting enrolment data it is suggested that there should be two assessments each year. Each assessment should be divided into male and female groups. The first assessment should be carried out at the commencement of the school year and should consist of:

1. The number of enrolments in each grade.

2. The number of pupils who are repeating the grade, and an indication of whether the repetition is first, second, third, etc.

3. The number of pupils who have been promoted from the previous grade.

4. The number of children who have been transferred from other schools:-

a) to an equivalent grade, i.e. they are repeating.
b) promoted from a lower grade.

In order that immediate practical use can be made of data it is suggested that the following retrospective material should be collected:

1. Year and age of initial enrolment.

2. Previous grade history, i.e. number of years in each grade.

The second assessment should be made at the end of the school year and the figures to be collected would be:

1. The number of children still attending during the last month of the school year.

2. The number of children who will be required to repeat the grade in the following year.

3. The number of pupils who have dropped-out over the year.

4. The number of pupils to be promoted.

The data obtained from the above will make it possible to complete year/grade data in considerable detail, and eventually cohorts would be constructed from the data. The data should, if the study is set up properly, be reasonably reliable and over the years would become of value in projecting the number of pupils attending elementary schools, and also the enrolments in any particular grade. In addition, it would be possible to indicate grade changes within any specific geographical area or changes under particular conditions. Such a study would give some idea of the movement of pupils from one school to another, though the data would not make it possible to recognise who these pupils are. It would also be possible to estimate changes in drop-out and repetition rates and the extent to which multiple repetition is involved in wastage.

As has been seen such figures can be used to estimate cost in terms of number of pupil years and this, if desirable, can be divided into public and private systems. Since male and female data has been collected separately it will be possible to note the progress in both boys and girls. This is of considerable importance as we have seen that in developing countries the education of boys and girls is progressing at very different rates.

The above may not be sufficient for an adequate examination of wastage particularly when we are looking at the causes of wastage. It would seem that there is a need for the collection of specific data on each child if we are going to understand the factors which are involved in wastage and educational success. If we collect data on individuals it will be possible to follow children through their life at school, i.e. we are collecting longitudinal material. Experimentally this is likely to provide much more valid information as it is intrinsically much more reliable than taking cross-sectional material. Since we are collecting longitudinal data and because it may be difficult to initiate studies of this type on a large scale, partly because of the limitations to resources of man-power, but also because of financial involvement, it may be advisable to start with the first year of elementary enrolment and gradually expand the study as the years go by. This would make it possible to sort out some of the problems which are inevitably involved in the commencement of every project. It should be remembered that the data on each child would be collected in its entirety from the inception of the study. The type of data required on each subject is indicated below. It is recommended that teachers should be closely involved with the study. However, since most of them will already be working under difficult conditions (e.g. shift systems, very large classes, in some cases be in charge of the whole of education for a particular school) it seems worth exploring the possibility of appointing special officers to examine these problems. We have seen that the appointment of attendance officers is likely to improve enrolment and lessen repetition and drop-out. It is suggested that the use of school personel working with assistants may be of advantage not only in terms of the viability of a research project, but also as practical means of combatting wastage. It should also be pointed out that research officers and assistants initially involved in research may form the basis of a practical service, not only as a remedy for wastage, but also as a means of dealing with the more sophisticated problems of education which tend to arise when there is effective compulsory education.

The data required from each child would include the following*

Name

Address

Date of Birth

Male/Female

Parental Occupation

Number of siblings

Distance travelled to school

The data would need to be collated centrally. In some countries a number of departments are concerned with children of school age (e.g. Children's Department, School Welfare, Public Health). In some cases this can result in children receiving visits from social workers from different clinics or school authorities. This may mean that although considerable data are collected on any one child it may not be co-ordinated centrally and therefore important material is lost or wrong decisions may be made. It is therefore recommended that if wastage studies are set up there should be arrangements for co-ordinating data from those authorities concerned with children. This is obviously of advantage in a research project, but it is also fundamental to any practical measures which are to be carried out in education.

A certain amount of additional information may be required, for example, language(s) spoken by the child, language difficulties, physical condition of the child, illnesses. This report has indicated some of the data which needs to be recorded. However, it is not intended to be an exhaustive list of relevant items, and the type of data required will partly depend on the type of problems facing the country carrying out the study. Nevertheless it is stressed that the amount of planning which goes into constructing a survey or experimental study is considerable. If this is done effectively it should avoid the type of difficulties raised in interpreting data encountered in this report.

If data are collected on the lines suggested above it would be possible to examine wastage problems in a reasonably valid manner and eradicate some of the difficulties involved in analysing much of the present material. Enrolment would be known for each grade over a

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* Questionnaires have already been produced for a number of countries. See United Nations Relief and Works Agency for Palestine Refugees. (1965). Also Dandekar, (1956).

Means of transport

Name of schools attended and date of entry. (These to be numbered 1 - X for classification purposes.)

It is suggested that the next part of the data should be incorporated in a table.

Year	1	2	3	4	5	6
Grade						
School: School number (1 - X) Private/Govt.						
Area: rural/urban						
Number of children in class (Number of children in room)						
Distance travelled to school						
Attendance during year						
Education hours possible per week						
Teaching qualifications (rating scale required, e.g. A, B, C etc.)						
Method of promotion (e.g. examination, rating objective tests.)						
Test results						

number of years, thus, predictions could be made of pupil registrations. It would be possible to divide this into male/female, public/private, and rural/urban groups, or indeed into any other grouping which would be meaningful in any particular country. Promotion and repetition rates (including 1 - n repetitions per grade) would be tabulated, and since individuals could be identified, true cohorts could be constructed, thus making possible estimates of true wastage. (The tabulating of data under these circumstances raises problems which can be dealt with in a number of ways, for example, see Gladstone, 1965). Given such data it would be possible to construct cost cohorts on the lines suggested in Table 4. However, the data would be of greater validity, since promotion rates would be related to a larger number of sub-groups (e.g. those repeating 1 - n times in grades 1 - 6), and would thus reflect more precisely the true nature of individual progress through the elementary school cycle. Furthermore, it would be possible to identify any association between wastage and size, location and conditions of schools, together with an examination of teacher/pupil ratios.

It will also be apparent that data collected in this manner would lend itself to an examination of wastage variables not only at administrative levels, but also in terms of the effects of different remedial measures.

APPENDIX 1

ELEMENTARY SCHOOL WASTAGE

SINGLE COHORT DATA

Percentage Loss from A) First Grade, B) Previous Grade.

					GRADES (Percentage loss)					
Country	Cohort			1	2	3	4	5	6	7
Basutoland	1955	A.	M	-	40	-	-	88	90	
			F	-	35	-	-	86	91	
		B.	M	-	-	-	-	-	-	
			F	-	-	-	-	-	-	
Cambodia	1954	A.	M	-	17	16	18	28	36	
			F	-	39	50	61	65	73	
			T	-	25	28	33	41	49	
		B.	M	-	17	+1	2	13	11	
			F	-	39	17	23	9	23	
			T	-	25	4	7	12	14	
Cameroon (East)	1957	A.	T	-	40	56	61	62		
		B.	T	-	40	27	11	3		
Ceylon	1957	A.	T	-	24	31	37	43	49	
		B.	T	-	24	9	9	10	11	
Chile	1957	A.	T	-	34	41	45	61	67	
		B.	T	-	34	12	7	29	16	
Colombia	1946	A.	T	-	41	78	89			
		B.	T	-	41	63	51			
Ecuador	1954	A.	T	-	40	51	65	75	79	
		B.	T	-	40	18	29	28	15	
El Salvador	1959	A.	T	-	40	62	70	76	78	
		B.	T	-	40	32	22	20	11	
Etheopia		A.	T	-	55	-	-	-	-	
		B.	T	-	55	-	-	-	-	
Indonesia	1961	A.	T	-	2	6				
		B.	T	-	2	4				
Iran	1956	A.	T	-	4	8	8	26	33	
		B.	T	-	4	4	0	19	10	

				GRADES (Percentage loss)							
Country	Cohort			1	2	3	4	5	6	7	8
Korea	1956	A.	M	-	4	6	7	11	12		
			F	-	3	5	8	12	16		
			P	-	3	6	8	11	14		
			Pr	-	2	4	8	9	+8		
			T	-	3	6	8	11	14		
		B.	M	-	4	2	1	3	2		
			F	-	3	2	3	5	4		
			P	-	3	2	2	4	3		
			Pr	-	2	2	4	1	+17		
			T	-	3	2	2	4	3		
Laos	1958	A.	M	-	57	67	84	86	86		
			F	-	43	67	74	85	85		
			T	-	53	67	81	86	86		
		B.	M	-	57	23	52	10	1		
			F	-	43	41	22	42	3		
			T	-	53	30	44	23	1		
Libya	1958	A.	T	-	37	45	52	56	65		
		B.	T	-	37	13	12	8	21		
Madagascar	1959*	A.	P	-	30	46	21*	62*	64*		
			Pr	-	39	53	17*	46*	-		
			T	-	33	49	20*	57*	-		
		B.	P	-	30	23	21*	43*	5*		
			Pr	-	39	22	17*	34*	-		
			T	-	33	23	20*	46*	-		
Malaysia	1950	A.	T	-	19	25	37	51	68		
		B.	T	-	-	-	-	-	-		
Mali	1959*	A.	M	-	8	23	29	4*	77*		
			F	-	11	23	22	12*	81*		
			T	-	9	23	27	6*	78*		
		B.	M	-	8	16	8	4*	76*		
			F	-	11	14	+2	12*	78*		
			T	-	9	15	5	6*	76*		
Newfoundland	1951	A.	T	-	41	42	43	44	47	50	56
		B.	T	-	41	2	2	3	5	7	11
N. Rhodesia	1958	A.	F	-	9	14	20	67	68		
		B.	F	-	9	6	7	59	3		
Pakistan	1956	A.	T	-	54	67	74	76			
		B.	T	-	54	27	22	6			

						GRADES (Percentage loss)					
Country	Cohort			1	2	3	4	5	6	7	8
Peru	1951	A.	T	-	21	32	46	52			
		B.	T	-	-	-	-	-			
Philippines	1955	A.	T	-	16	24	31	45	57		
		B.	T	-	16	9	10	21	21		
Sierra Leone	1956	A.	T	-	29	29	34	45	53	59	
		B.	T	-	29	1	6	20	11	12	
Somalia	1958	A.	M	-	+3	6					
			F	-	9	+3					
			T	-	+1	5					
		B.	M	-	+3	8					
			F	-	9	+13					
			T	-	+1	6					
Sudan	1960*	A.	T	-	-	-	-				
		B.	T	-	15*	13*	26*				
Swaziland	1957	A.	T	-	37	40	53	58	67	69	72
		B.	T	-	37	6	21	10	23	5	11
Venezuela	1956	A.	P	-	44	49	55	63	71		
			Pr	-	14	21	18	27	32		
			T	-	41	45	51	59	67		
		B.	P	-	44	8	13	18	22		
			Pr	-	14	8	+4	11	7		
			T	-	41	8	10	17	19		
Vietnam	1959	A.	M	-	26	36	51	55			
			F	-	28	44	60	65			
			T	-	27	40	55	60			
		B.	M	-	26	14	23	9			
			F	-	28	22	28	13			
			T	-	27	18	25	11			

M = male pupils
F = female pupils
T = total number of pupils

P = public schools
Pr = private schools

* indicates data made up of split cohorts.

ELEMENTARY SCHOOL WASTAGE

Single Cohort Data Showing Enrolment Figures per Grade[1], Holding

Each Grade Expressed in Terms of Percentage of a) Grade 1[2] and b) Pr

Country	Cohort		Grade 1 Raw[1]	%1st[2]	%Prev[3]	Grade 2 Raw	%1st	%Prev	Grade 3 Raw	%1st
Basutoland	1955	M	-	100	100	-	60	60	-	-
		F	-	100	100	-	66	66	-	-
Cameroon	1957	T	117,198	100	100	70,064	60	60	51,136	44
Cambodia	1954	M	50,200	100	100	41,900	83	83	42,200	84
		F	27,700	100	100	16,800	61	61	13,900	50
		T	77,900	100	100	58,700	75	75	56,100	72
Ceylon	1957	T	389,985	100	100	296,080	76	76	270,524	69
Chile	1957	T	340,830	100	100	225,547	66	66	199,572	59
Colombia	1946	T	381,848	100	100	223,840	59	59	82,841	22
Ecuador	1954	T	163,5	100	100	97,7	60	60	80,5	49
El Salvador	1959	T	119,574	100	100	67,984	60	60	46,023	38

ng Power of

Previous Grade[3].

	Grade 4			Grade 5			Grade 6		
%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev
-	-	-	-	-	12	-	-	10	
-	-	-	-	-	14	-	-	9	
73	45,543	39	39	44,011	38	97			
101	41,400	82	98	36,000	72	87	31,900	64	89
83	10,700	39	77	9,700	35	91	7,500	27	77
96	52,100	67	93	45,700	59	88	39,400	51	86
91	247,507	63	91	222,838	57	90	198,040	51	89
88	186,234	55	93	132,484	39	71	111,840	33	84
37	40,353	11	49						
82	56,9	35	71	41,2	25	72	35,1	21	85
68	36,047	30	78	29,036	24	80	25,896	22	89

			Grade 1			Grade 2			Grade 3		
Country	Cohort		Raw[1]	%1st[2]	%Prev[3]	Raw	%1st	%Prev	Raw	%1st	%P
Ethiopia			-	100	100	-	45	45			
Indonesia	1961*	T	61,500	100	100	60,500	98	98	58,200	95	96
Iran	1956	T	-	100	100	-	96	96	-	92	96
Korea	1956	M	310,977	100	100	299,423	96	96	292,000	94	98
		F	240,099	100	100	233,189	97	97	227,447	95	98
		P	547,825	100	100	529,120	97	97	516,013	94	98
		Pr	1,256	100	100	1,228	98	98	1,202	96	98
		T	551,076	100	100	532,612	97	97	519,447	94	98
Laos	1958	M	30,825	100	100	13,312	43	43	10,219	33	77
		F	12,622	100	100	7,142	57	57	4,199	33	59
		T	43,447	100	100	20,454	47	47	14,418	33	70
Libya	1958	T	33,546	100	100	21,027	63	63	18,308	55	87
Madagascar	1959*	P	105,255	100	100	73,313	70	70	56,336 (44,678	54 -	77 -
		Pr	51,646	100	100	31 403	61	61	24,399 (22,763	47 -	78 -
		T	156,901	100	100	104,716	67	67	80,735 (67,441	51 -	77 -

	Grade 4			Grade 5			Grade 6		
Prev	Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev
96	40,300	100	100	38,600	96	96	30,900	77	80
96	-	92	100	-	74	81	-	67	90
98	287,735	93	99	278,261	89	97	272,210	88	98
98	221,086	92	97	21[illegible],115	88	95	201,879	84	96
98	505,260	92	98	485,691	89	96	470,221	86	97
98	1,159	92	96	1,147	91	99	1,345	108	117
98	508,821	92	98	489,376	89	96	474,089	86	97
77	4,868	16	48	4,361	14	90	4,336	14	99
59	3,262	26	78	1,888	15	58	1,838	15	97
70	8,130	19	56	6,249	14	77	6,174	14	99
87	16,178	48	88	14,902	44	92	11,738	35	79
77 -	35,355	79	79	16,773	38	47	15,935	36	95
78 -	18,844	83	83	12,353	54	66	-	-	-
77 -	54,199	80	80	29,126	43	54	-	-	-

Country	Cohort		Grade 1 Raw[1]	 %1st[2]	 %Prev[3]	Grade 2 Raw	 %1st	 %Prev	Grade 3 Raw	 %1st	 %Pr
Malaysia	1950	T	-	100	100	-	81	81	-	75	-
Mali	1959*	M	11,169	100	100	10,223	92	92	8,623	77	84
		F	4,616	100	100	4,126	89	89	3,554	77	86
		T	15,785	100	100	14,349	91	91	12,177	77	85
Newfoundland	1951	T	17,212	100	100	10,218	59	59	10,041	58	98
N. Rhodesia	1958	F	25,824	100	100	23,578	91	91	22,198	86	94
Pakistan	1956	T	2017.	100	100	923.	46	46	671.	33	73
Peru	1951	T	-	100	100	-	79	79	-	68	-
Philippines	1955	T	854,357	100	100	714,993	84	84	650,084	76	91
Sierra Leone	1956	T	14,905	100	100	10,640	71	71	10,559	71	99

	Grade 4			Grade 5			Grade 6			Grade 7		
%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev
-	-	63	-	-	49	-	-	32	-			
84	7,962	71	92									
	(5,886	-	-	5,674	96	96	1,380	23	24			
86	3,610	78	102									
	(2,235	-	-	1,971	88	88	429	19	22			
85	11,572	73	95									
	(8,121	-	-	7,645	94	94	1,809	22	24			
98	9,867	57	98	9,571	56	97	9,133	53	95	8,530	50	93
94	20,543	80	93	8,502	33	41	8,262	32	97			
73	525.	26	78	495.	24	94						
-	-	54	-	-	48	-						
91	586,914	69	90	466,497	55	79	367,889	43	79			
99	9,902	66	94	7,955	55	80	7,052	47	89	6,176	41	88

7		Grade 8	
%Prev	Raw	%1st	%Prev
93	7,615	44	89
88			

Country	Cohort		Grade 1 Raw[1]	 %1st[2]	 %Prev	Grade 2 Raw	 %1st	 %Prev	Grade 3 Raw	 %1st	 %Pr
Somalia	1958	M	831	100	100	855	103	103	784	94	92
		F	116	100	100	106	91	91	120	103	113
		T	947	100	100	961	101	101	904	95	94
Sudan	1960*	T	108,827	100	100	92,351	85	85	71,521	-	87
						(87,246	-	-	75,678	-	-
Swaziland	1957	T	8,521	100	100	5,351	63	63	5,023	60	94
Venezuela	1956	P	213,643	100	100	119,392	56	56	109,932	51	92
		Pr	28,560	100	100	24,570	86	86	22,608	79	92
		T	242,203	100	100	143,962	59	59	132,540	55	92
Vietnam	1959	M	244,527	100	100	181,830	74	74	156,255	64	86
		F	179,364	100	100	128,666	72	72	99,879	56	78
		T	423,891	100	100	310,496	73	73	256,134	60	82

	Grade 4			Grade 5			Grade 6			Grade 7	
%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st
92											
113											
94											
87	52,974	-	74								
-	-	-	-)								
94	3,984	47	79	3,601	42	90	2,787	33	77	2,651	31
92	95,752	45	87	78,504	37	82	61,495	29	78		
92	23,423	82	104	20,790	73	89	19,419	68	93		
92	119,175	49	90	99,294	41	83	80,914	33	81		
86	120,082	49	77	109,114	45	91					
78	71,592	40	72	62,335	35	87					
82	191,674	45	75	171,449	40	89					

	Grade 8		
%Prev	Raw	%1st	%Prev
95	2,350	28	89

APPENDIX 2

ELEMENTARY SCHOOL WASTAGE

MULTIPLE COHORT DATA

Percentage Loss from A) First Grade, B) Previous Grade.

Country	Cohort			GRADES (Percentage loss) 1	2	3	4	5	6	7	8
Basutoland	1955	A.	M	-	40	-	-	88	90		
			F	-	35	-	-	86	91		
		B.	M	-	-	-	-	-	-		
			F	-	-	-	-	-	-		
	1956	A.	M	-	42	-	-	88	89		
			F	-	34	-	-	86	90		
		B.	M	-	-	-	-	-	-		
			F	-	-	-	-	-	-		
Cambodia	1950	A.	M	-	+1	18	49	55	58		
			F	-	17	51	73	77	81		
			T	-	4	27	55	61	65		
		B.	M	-	+1	19	38	11	8		
			F	-	17	41	45	13	20		
			T	-	4	24	30	11	10		
	1951	A.	M	-	3	27	39	51	50		
			F	-	39	59	70	80	82		
			T	-	14	37	49	60	60		
		B.	M	-	3	25	17	19	+3		
			F	-	39	33	28	33	8		
			T	-	14	26	11	22	+1		
	1952	A.	M	-	2	21	38	42	50		
			F	-	34	47	68	74	79		
			T	-	11	29	47	51	58		
		B	M	-	2	19	22	6	13		
			F	-	34	21	39	18	20		
			T	-	11	20	25	9	14		
	1953	A.	M	-	5	13	21	31	34		
			F	-	32	54	65	73	73		
			T	-	14	27	36	46	47		
		B.	M	-	5	9	9	13	3		
			F	-	32	32	24	24	+2		
			T	-	14	15	12	15	3		
	1954	A.	M	-	17	16	18	28	36		
			F	-	39	50	61	65	73		
			T	-	25	28	33	41	49		
		B.	M	-	17	+1	2	13	11		
			F	-	39	17	23	9	23		
			T	-	25	4	7	12	14		
	1955	A.	M	-	17	20	23	39	41		
			F	-	34	47	51	66	67		
			T	-	23	29	33	48	50		
		B.	M	-	17	4	4	21	4		
			F	-	34	20	6	30	4		
			T	-	23	9	4	23	4		

						GRADES (Percentage loss)					
Country	Cohort			1	2	3	4	5	6	7	8
Ceylon	1952	A.	T	-	27	32	39	48	55		
		B.	T	-	27	6	11	14	14		
	1957	A.	T	-	24	31	37	43	49		
		B.	T	-	24	9	9	10	11		
Colombia	1942	A.	T	-	42	78	90				
		B.	T	-	42	62	53				
	1943	A.	T	-	43	80	89				
		B.	T	-	43	65	46				
	1944	A.	T	-	46	79	89				
		B.	T	-	46	62	48				
	1945	A.	T	-	42	78	89				
		B.	T	-	42	63	49				
	1946	A.	T	-	41	78	89				
		B.	T	-	41	63	51				
Ecuador	1947	A.	T	-	46	57	72	82	86		
		B.	T	-	46	20	34	35	23		
	1954	A.	T	-	40	51	65	75	79		
		B.	T	-	40	18	29	28	15		
Lacs	1956	A.	M	-	56	51	76	84	88		
			F	-	52	53	79	86	84		
			T	-	55	51	77	84	85		
		B.	M	-	56	+11	52	32	24		
			F	-	52	2	56	32	+12		
			T	-	55	+7	53	32	7		
	1957	A.	M	-	46	45	73	83	83		
			F	-	45	47	75	81	82		
			T	-	46	46	73	82	83		
		B.	M	-	46	+1	51	35	3		
			F	-	45	3	53	25	5		
			T	-	46	+1	52	32	4		
	1958	A.	M	-	57	67	84	86	86		
			F	-	43	67	74	85	85		
			T	-	53	67	81	86	86		
		B.	M	-	57	23	52	10	1		
			F	-	43	41	22	42	3		
			T	-	53	30	44	23	1		

				GRADES (Percentage loss)							
Country	Cohort			1	2	3	4	5	6	7	8
Malaysia	1950	A.	T	-	19	25	37	51	68		
		B.	T	-	-	-	-	-	-		
	1957	A.	T	-	9	16	19	29	30		
		B.	T	-	-	-	-	-	-		
Newfoundland	1950	A.	T	-	43	45	47	49	51	55	60
		B.	T	-	45	3	3	2	6	7	12
	1951	A.	T	-	41	42	43	44	47	50	56
		B.	T	-	41	2	2	3	5	7	11
	1952	A.	T	-	42	43	43	45	48	51	54
		B.	T	-	42	2	0	4	4	7	7
	1953	A.	T	-	38	38	39	41	43	46	52
		B.	T	-	38	1	1	3	4	5	10
	1954	A.	T	-	35	37	38	39	40	42	48
		B.	T	-	35	3	1	2	2	3	11
	1955	A.	T	-	34	35	36	37	39	41	47
		B.	T	-	34	1	2	2	3	3	9
	1956	A.	T	-	33	34	35	36	39	41	45
		B.	T	-	33	1	1	3	5	3	6
Philippines	1950	A.	T	-	17	29	37	55	65		
		B.	T	-	17	15	11	28	22		
	1951	A.	T	-	23	30	38	54	62		
		B.	T	-	23	10	11	26	18		
	1952	A.	T	-	20	28	36	50	61		
		B.	T	-	20	10	12	22	21		
	1953	A.	T	-	19	26	34	50	59		
		B.	T	-	19	9	10	24	18		
	1954	A.	T	-	18	23	32	46	55		
		B.	T	-	18	6	12	20	18		
	1955	A.	T	-	16	24	31	45	57		
		B.	T	-	16	9	10	21	21		
Somalia	1953	A.	M	-	13	14					
			F	-	7	7					
			T	-	13	13					
		B.	M	-	13	1					
			F	-	7	0					
			T	-	13	1					
	1958	A.	M	-	+3	6					
			F	-	9	+3					
			T	-	+1	5					

				GRADES (Percentage loss)							
Country	Cohort			1	2	3	4	5	6	7	8
Somalia (cont.)	1958	B.	M	-	+3	8					
			F	-	9	+13					
			T	-	+1	6					
Swaziland	1951	A.	T	-	57	65	73	76	80	83	85
		B.	T	-	57	17	23	11	18	15	8
	1952	A.	T	-	57	63	72	74	80	80	83
		B.	T	-	57	15	23	9	20	2	16
	1953	A.	T	-	52	56	64	71	75	77	80
		B.	T	-	52	9	18	19	15	6	13
	1954	A.	T	-	52	54	64	69	76	77	78
		B.	T	-	52	5	21	15	21	5	6
	1955	A.	T	-	42	51	62	68	73	75	78
		B.	T	-	42	15	22	18	13	9	11
	1956	A.	T	-	40	45	59	63	69	73	74
		B.	T	-	40	8	26	11	16	12	5
	1957	A.	T	-	37	40	53	58	67	69	72
		B.	T	-	37	6	21	10	23	5	11
Venezuela	1951	A.	T	-	55	62	69	76	81		
		B.	T	-	55	16	19	22	19		
	1952	A.	T	-	54	63	68	74	80		
		B.	T	-	54	14	20	18	22		
	1953	A.	T	-	50	57	65	71	77		
		B.	T	-	50	14	18	18	21		
	1954	A.	T	-	46	53	60	67	73		
		B.	T	-	46	12	16	18	17		
	1955	A.	T	-	42	48	55	62	69		
		B.	T	-	42	11	14	14	19		
	1956	A.	T	-	41	45	51	59	67		
		B.	T	-	41	10	10	17	19		
Vietnam	1956	A.	M	-	6	12	35	41			
			F	-	12	29	54	61			
			T	-	8	19	43	49			
		B.	M	-	6	6	27	10			
			F	-	12	20	35	15			
			T	-	8	12	30	11			
	1957	A.	M	-	2	14	40	44			
			F	-	12	32	57	63			
			T	-	6	21	47	52			
		B.	M	-	2	12	30	8			
			F	-	12	23	36	14			
			T	-	6	16	32	10			

				GRADES (Percentage loss)							
Country	Cohort			1	2	3	4	5	6	7	8
Vietnam (cont.)	1958	A.	M	-	17	30	49	54			
			F	-	19	40	60	66			
			T	-	18	34	53	59			
		B.	M	-	17	16	27	10			
			F	-	19	26	33	14			
			T	-	18	20	29	11			
	1959	A.	M	-	26	36	51	55			
			F	-	28	44	60	65			
			T	-	27	40	55	60			
		B.	M	-	26	14	23	9			
			F	-	28	22	28	13			
			T	-	27	18	25	11			

M = male pupils
F = female pupils
T = total number of pupils

ELEMENTARY SCHOOL WASTAGE DATA

Multiple Cohort Data Showing Enrolment Figures [illegible] Grade[1], Holding Po

Each Grade Expressed in Terms of Percentage of a) Grade 1[2] and b) Previous

Country	Cohort		Grade 1			Grade 2			Grade 3		
			Raw[1]	%1st[2]	%Prev[3]	Raw	%1st	%Prev	Raw	%1st	%Pre
Basutoland	1955	M	-	100	100	-	60	60	-	-	-
		F	-	100	100	-	66	66	-	-	-
	1956	M	-	100	100	-	59	59	-	-	-
		F	-	100	100	-	66	66	-	-	-
Cambodia	1950	M	23,800	100	100	24,100	101	101	19,600	82	81
		F	8,600	100	100	7,100	83	83	4,200	49	59
		T	32,400	100	100	31,200	96	96	23,800	73	76
	1951	M	29,200	100	100	28,400	97	97	21,400	73	75
		F	13,200	100	100	8,000	61	61	5,400	41	67
		T	42,400	100	100	36,400	86	86	26,800	63	74
	1952	M	35,500	100	100	34,800	98	98	28,100	79	81
		F	15,200	100	100	10,100	66	66	8,000	53	79
		T	50,700	100	100	44,900	89	89	36,100	71	80
	1953	M	46,800	100	100	39,900	95	95	36,300	87	91
		F	22,400	100	100	15,300	68	68	10,400	46	68
		T	64,200	100	100	55,200	86	86	46,700	73	85
	1954	M	50,200	100	100	41,900	83	83	42,200	84	101
		F	27,700	100	100	16,800	61	61	13,900	50	83
		T	77,900	100	100	58,700	75	75	56,100	72	96
	1955	M	56,200	100	100	46,700	83	83	44,800	80	96
		F	29,300	100	100	19,400	66	66	15,500	53	80
		T	85,500	100	100	66,100	77	77	60,300	71	91

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Grade 3.

Grade 4			Grade 5			Grade 6			Grade 7		
Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	% Prev	Raw	%1st	%Prev
-	-	-	-	13	-	-	10	-			
-	-	-	-	15	-	-	9	-			
-	-	-	-	12	-	-	11	-			
-	-	-	-	14	-	-	10	-			
12,100	51	62	10,800	45	89	9,900	42	92			
2,300	27	55	2,000	23	87	1,600	19	80			
14,400	45	60	12,800	39	89	11,500	35	90			
17,700	61	83	14,300	49	81	14,700	50	103			
3,900	30	72	2,600	20	67	2,400	18	92			
21,600	51	81	16,900	40	78	17,100	40	101			
22,000	62	78	20,600	58	94	17,900	50	87			
4,900	32	61	4,000	26	82	3,200	21	80			
26,900	53	75	24,600	49	91	21,100	42	86			
33,200	79	91	28,800	69	87	27,800	66	97			
7,900	35	76	6,000	27	76	6,100	27	102			
41,100	64	88	34,[illegible]00	54	85	33,900	53	97			
41,400	82	98	36,000	72	87	31,900	64	89			
10,700	39	77	9,700	35	91	7,500	27	77			
52,100	67	95	45,700	59	88	39,400	51	86			
43,200	77	96	34,100	61	79	32,900	59	96			
14,500	49	94	10,100	34	70	9,700	33	96			
57,700	67	96	44,200	52	77	42,600	50	96			

			Grade 1			Grade 2			Grade 3		
Country	Cohort		Raw [1]	%1st [2]	%Prev [3]	Raw	%1st	%Prev	Raw	%1st	%Prev
Ceylon	1952	T	315,796	100	100	230,135	73	73	216,293	68	94
	1957	T	389,985	100	100	296,080	76	76	270,524	69	91
Colombia	1942	T	343,164	100	100	199,651	58	58	75,796	22	38
	1943	T	364,656	100	100	206,379	57	57	71,688	20	35
	1944	T	375,139	100	100	202,943	54	54	77,311	21	38
	1945	T	369,398	100	100	214,116	58	58	79,217	22	37
	1946	T	381,848	100	100	223,840	59	59	82,841	22	37
Ecuador	1947	T	122,2	100	100	65,6	54	54	52,5	43	80
	1954	T	163,5	100	100	97,7	60	60	80,5	49	82
Laos	1956	M	29,167	100	100	12,945	44	44	14,417	49	111
		F	10,622	100	100	5,119	48	48	5,030	47	98
		T	39,789	100	100	18,064	45	45	19,447	49	107
	1957	M	24 001	100	100	12,877	54	54	13,180	55	101
		F	9,924	100	100	5,413	55	55	5,253	53	97
		T	33,925	100	100	18,290	54	54	18,433	54	101

Grade 4			Grade 5			Grade 6			Grade 7		
Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev
192,882	61	89	165,615	52	86	141,850	45	86			
247,507	63	91	222,838	57	90	198,040	51	89			
35,357	10	47									
38,523	11	54									
40,561	11	52									
40,692	11	51									
40,353	11	49									
34,7	28	66	22,4	18	65	17,3	14	77			
56,9	35	71	41,2	25	72	35,1	21	85			
6,895	24	48	4,714	16	68	3,603	12	76			
2,194	21	44	1,494	14	68	1,674	16	112			
9,089	23	47	6,208	16	68	5,722	15	93			
6,398	27	49	4,139	17	65	3,999	17	97			
2,491	25	47	1,867	19	75	1,770	18	95			
8,889	26	48	6,006	18	68	5,769	17	96			

Country	Cohort		Grade 1 Raw[1]	%1st[2]	%Prev[3]	Grade 2 Raw	5 %1st	%Prev	Grade 3 Raw	%1st	%Prev
Laos (cont.)	1958	M	30,825	100	100	13,312	43	43	10,219	33	77
		F	12,622	100	100	7,142	57	57	4,199	33	59
		T	43,447	100	100	20,454	47	47	14,418	33	70
Malaysia	1950	T	-	100	100	-	81	-	-	75	-
	1957	T	-	100	100	-	91	-	-	84	-
Newfoundland	1950	T	18,422	100	100	10,417	57	57	10,099	55	97
	1951	T	17,212	100	100	10,218	59	59	10,041	58	98
	1952	T	18,004	100	100	10,449	58	58	10,243	57	98
	1953	T	19,071	100	100	11,886	62	62	11,746	62	99
	1954	T	19,410	100	100	12,554	65	65	12,200	63	97
	1955	T	19,516	100	100	12,935	66	66	12,750	65	99
	1956	T	20,025	100	100	13,364	67	67	13,236	66	99

Grade 4			Grade 5			Grade 6			Grade 7			Gr
Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev	Raw
4,868 3,262 8,130	16 26 19	48 78 56	4,361 1,888 6,249	14 15 14	90 58 77	4,336 1,838 6,174	14 15 14	99 97 99				
-	63		-	49	-	-	32	-				
-	81		-	71	-	-	70	-				
9,772	53	97	9,453	51	98	9,010	49	94	8,344	45	93	7,315
9,867	57	98	9,571	56	97	9,133	53	95	8,530	50	93	7,615
10,230	57	100	9,824	55	96	9,444	52	96	8,801	49	93	8,214
11,606	61	99	11,243	59	97	10,805	57	96	10,223	54	95	9,232
12,094	62	99	11,882	61	98	11,612	60	98	11,277	58	97	10,058
12,530	64	98	12,277	63	98	11,858	61	97	11,488	59	97	10,416
13,112	65	99	12,772	64	97	12,134	61	95	11,781	59	97	11,084

rade 7			Grade 8		
	%1st	%Prev	Raw	%1st	%Prev
4	45	93	7,315	40	88
0	50	93	7,615	44	89
1	49	93	8,214	46	93
3	54	95	9,232	48	90
7	58	97	10,058	52	89
8	59	97	10,416	53	91
1	59	97	11,084	55	94

Country	Cohort		Grade 1 Raw[1]	%1st[2]	%Prev[3]	Grade 2 Raw	%1st	%Prev	Grade 3 Raw	%1st	%Prev
Philippines	1950	T	885,948	100	100	733,211	83	83	625,139	71	85
	1951	T	844,760	100	100	654,424	77	77	590,203	70	90
	1952	T	821,628	100	100	659,819	80	80	595,392	72	90
	1953	T	835,694	100	100	672,950	81	81	614,737	74	91
	1954	T	803,161	100	100	661,959	82	82	619,785	77	94
	1955	T	854,357	100	100	714,993	84	84	650,084	76	91
Somalia	1953	M	395	100	100	344	87	87	340	86	99
		F	29	100	100	27	93	93	27	93	100
		T	424	100	100	371	87	87	367	87	99
	1958	M	831	100	100	855	103	103	784	94	92
		F	116	100	100	106	91	91	120	103	113
		T	947	100	100	961	101	101	904	95	94
Swaziland	1951	T	5,924	100	100	2,518	43	43	2,095	35	83
	1952	T	6,736	100	100	2,893	43	43	2,472	37	85
	1953	T	6,430	100	100	3,106	48	48	2,820	44	91
	1954	T	7,510	100	100	3,591	48	48	3,424	46	95
	1955	T	8,648	100	100	4,974	58	58	4,247	49	85

Grade 4			Grade 5			Grade 6			Grade 7		
Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev
554,420	63	89	397,224	45	72	310,181	35	78			
523,095	62	89	388,429	46	74	317,895	38	82			
525,250	64	88	409,713	50	78	324,258	39	79			
552,641	66	90	419,781	50	76	345,584	41	82			
547,344	68	88	436,227	54	80	359,218	45	82			
586,914	69	90	466,497	55	79	367,889	43	79			

1,604	27	77	1,434	24	89	1,173	20	82	992	17	85
1,893	28	77	1,719	26	91	1,370	20	80	1,346	20	98
2,319	36	82	1,875	29	81	1,601	25	85	1,508	23	94
2,715	36	79	2,299	31	85	1,821	24	79	1,738	23	95
3,313	38	78	2,725	32	82	2,360	27	87	2,152	25	91

Grade 7		Grade 8		
%1st	%Prev	Raw	%1st	%Prev
17	85	913	15	92
20	98	1,135	17	84
23	94	1,315	20	87
23	95	1,627	22	94
25	91	1,909	22	89

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Country	Cohort		Grade 1 Raw[1]	 %1st[2]	 %Prev[3]	Grade 2 Raw	 %1st	 %Prev	Grade 3 Raw	 %1st	 %Pre
Swaziland (cont.)	1956	T	9,025	100	100	5,402	60	60	4,989	55	92
	1957	T	8,521	100	100	5,351	63	63	5,023	60	94
Venezuela	1951	T	230,132	100	100	104,094	45	45	87,628	38	84
	1952	T	236,950	100	100	109,878	46	46	94,055	37	86
	1953	T	238,950	100	100	119,769	50	50	102,586	43	86
	1954	T	234,672	100	100	125,838	54	54	111,314	47	88
	1955	T	229,955	100	100	133,325	58	58	119,029	52	89
	1956	T	242,203	100	100	143,962	59	59	132,540	55	90
Vietnam	1956	M	142,822	100	100	134,817	94	94	126,386	88	94
		F	102,266	100	100	90,286	88	88	72,446	71	80
		T	245,088	100	100	225,103	92	92	198,832	81	88
	1957	M	167,223	100	100	163,676	98	98	144,386	86	88
		F	127,070	100	100	111,963	88	88	86,772	68	77
		T	294,293	100	100	275,639	94	94	231,158	79	84
	1958	M	219,081	100	100	182,199	83	83	153,408	70	84
		F	162,417	100	100	130,892	81	81	96,961	60	74
		T	381,498	100	100	313,091	82	82	250,369	66	80

	Grade 4			Grade 5			Grade 6			Grade 7		
ev	Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%Pre
	3,695	44	74	3,297	37	89	2,762	31	84	2,426	27	88
	3,984	47	79	3,601	42	90	2,787	33	77	2,651	31	95
	70,558	31	81	55,373	24	78	44,691	19	81			
	75,209	32	80	61,751	26	82	48,276	20	78			
	83,882	35	82	68,576	29	82	54,155	23	79			
	93,196	40	84	76,706	33	82	63,693	27	83			
	102,383	45	86	87,835	38	86	71,321	31	81			
	119,175	49	90	99,294	41	83	80,914	33	81			
	92,763	65	73	83,673	59	90						
	47,180	46	65	40,294	39	85						
	139,943	57	70	123,967	51	89						
	100,966	60	70	93,048	56	92						
	55,261	43	64	47,510	37	86						
	156,227	53	68	140,558	48	90						
	112,417	51	73	101,400	46	90						
	65,326	40	67	55,938	34	86						
	177,743	47	71	157,338	41	89						

	Grade 8		
rev	Raw	%1st	%Prev
8	2,313	26	95
6	2,350	28	89

Country	Cohort		Grade 1			Grade 2			Grade 3		
			Raw[1]	%1st[2]	%Prev[3]	Raw	%1st	%Prev	Raw	%1st	%Prev
Vietnam (cont.)	1959	M	244,527	100	100	181,830	74	74	156,255	64	86
		F	179,364	100	100	128,666	72	72	99,879	56	78
		T	423,891	100	100	310,496	73	73	256,134	60	82

M = male pupils
F = female pupils
T = total number of pupils

Grade 4			Grade 5			Grade 6			Grade 7		
Raw	%1st	%Prev	Raw	%1st	%Prev	Raw	%1st	%prev	Raw	%1st	%Prev
120,082	49	77	109,114	45	91						
71,592	40	72	62,335	35	87						
191,674	45	75	171,449	40	89						

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